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ST. MARYLEBONE INFIRMARY.

CLINICAL LECTURES
ON
MEDICINE AND MEDICAL PRACTICE,
DELIVERED BY

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IN my last lecture, this day fortnight, I was occupied, first, with the treatment of two cases, one of rheumatism with disease of the heart, and the other of phthisical diarrhœa, both admitted during the month of January; and afterwards with an account of the effects of diuretics as substitutes for expectorants in bronchial affections. With respect to the cases, I wish before entering upon the special business of to-day, to mention that the plan of treatment in each case already described has been persevered in, and with apparent advantage up to the present time. The diarrhœa of the consumptive man had, you remember, resisted opium and copper, chalk and opium, &c., in such doses as the stomach, &c., would bear. The lunar caustic and laudanum injections, however, combined with acetate of lead and poppy extract, three grains each every four hours, have checked and mitigated very much the looseness, and without disturbance of any vital function. He has been for some days having injected ten grains of lunar caustic with fifteen drops of laudanum in four ounces of barley-water morning and evening: I have no hope of succeeding in altogether suppressing the diarrhœa, because his lungs are too far gone by half, and his constitution is too much broken up to admit of cicatrisation of the ulcers of the rectum, colon, and ileum; and he is now getting sore rather at the anus, owing to the frequent introduction of the injection tube; but the case shows the utility of the remedy in very unfavourable circumstances, and is therefore worth your notice. The second case of the girl with hypertrophy of the heart with lesion of the mitral valve (both sequelæ apparently of acute rheumatism), continues under the iodine plan, and so far I have found reason to be satisfied with the remedy: she is now taking about half a drachm of the iodide of potass in the day with restricted diet. I hope to be able to give you a good account of her in some future lecture.*

Now with respect to new cases. In the course of the week ending Friday, the 18th of this month, twenty-five new patients were admitted under me. Of these several were under twelve months, and more than half a dozen under five years of age; the rest were of various ages between fifteen and seventy; about half were of either sex; about half were cases of pectoral, and mostly pulmonary disease; viz., phthisis in various stages and combinations; hooping-cough; chronic cough, with emphysema of the lungs in several instances; two or three cases of disease of the heart variously complicated; two were female cases of mental disorder, one connected with epilepsy, and the other with childbirth; several were cases of pneumonia, especially in children; several of rheumatism; two of apoplexy, and of the following six, viz., convulsions of children, scarlet fever, measles, hysteria, ulcerated sore throat, debility of old age, of each one case. The discharges of my patients have amounted to twenty since my last lecture, of which nine or ten have been by death, and the rest by recovery more or less complete. Of the deaths, two were of adult males admitted the previous month from phthisis; two were by apoplexy in males turned of sixty; both died within a few hours after admission. One of these, sixty-one years of age, had disease of the heart and old asthma; his heart was enormously enlarged, and principally on the left side; and his lungs were emphysematous, as Dr. Boyd has informed me, for I was unable to attend the examination. Of the other deaths, five were under three years of age; one from measles, two from double lobular pneumonia simply, and one from the same with convulsions; the fifth was from phthisis with gangrene of one cheek; and the sixth was that of a boy seven years of age,

* This patient has been since (March 3) discharged convalescent.—*Rep.* L.

who had emphysematous lungs, upon which vesicular pneumonia had supervened, and hydatids, as post-mortem inspection afterwards evinced, existed in his liver. This child required stimulants on the second day, and sank in about forty-eight hours. Of the other children, one died convulsed on the day of admission; a second, having incipient tuberculation of the lungs, the day after admission; a third, on the third day of treatment; the fourth lingered after admission about a week, requiring wine on the third day, and sank the ninth day of treatment under a low scrofulous pneumonia; of the fifth I shall speak hereafter.

DIURETICS IN PHTHISIS, CHRONIC CATARRH, &c., CASES.

Of the twenty cases above alluded to as discharged by recovery or death, several had been treated on the plan shortly glanced at in my last lecture, where I spoke of the use of diuretics in bronchitis complicated and uncomplicated; of the cases, of death one, and of the other discharges, two had been under the influence of such means for a week at least before removal. The former was a man of twenty-one, admitted January 26th, with unequivocal signs of phthisical mischief, viz., more or less depression, dulness, and inexpansibility, with the sounds of breathing correspondingly changed, in both subclavian regions; some gurgling in the left side; more or less dulness of the superior scapular and axillary regions; hæmoptysis a month previously, &c. Other signs evinced the existence of bronchitis throughout the lungs, and to this I attributed much of the difficulty of his breathing, the still spongy and respirable portions of the lungs being encumbered by thick, tough mucous fluids varnishing the air-passages, and obstructing the air in its passage to and fro. To relieve the man's breathing without incurring risk of some new inconvenience, such as debilitating sweating or looseness had I given antimony or ipecacuan or purgatives, I gave him the following:—

℞ *Compound juniper mixture*, ℥iss;
Nitric ether, ℥ss;
Acetate of potass, ℈j.
To be taken every four hours.

Under this medicine he continued from Feb. 4th to Feb. 11th; and from the first to the last he told me he felt his breathing easier for it. The mixture acted freely on his kidneys from the first. On the 11th the colliquative sweating was a deal good complained of, and seemed to disturb his sleep, which is of all restoratives the most valuable perhaps in such cases, and I consequently rather reluctantly suspended the diuretic, and gave him lead.

℞ *Diacetate of lead*, gr. ij;
Extract of henbane, gr. iij.
To be taken every four hours.

Lead is well known to possess great astringent power over all passive fluxes and discharges from weakness, and not less against those of the air tubes than of other surfaces; I therefore hoped still to effect the double end previously aimed at of checking sweating, and at the same time restraining bronchial catarrh, on a different principle, however. But though relieved again by the astringent it was too late; he sank on the 22nd, and the post-mortem confirmed the diagnosis.

The two other cases in which the like use was made of diuretics, were both persons between fifty and sixty; one male and one female. In both the symptoms complained of were cough, difficulty of breathing; in the man of twelve months' standing and in the woman of at least several weeks: in each there was ground for suspecting tuberculation of one or both apices of the lungs; the female had sufficiently distinct dulness on the left side about the clavicle and shoulder, and the man had similar but obscure traces of phthisical tendencies. They were both treated with light antimonials and low diet at first, but in the course of a few days were both placed on a diet, including animal food, in limited quantity, with half a pint of ale, and were ordered diuretic mixture nearly the same as that last mentioned. The man used the diuretics for a fortnight, when he was discharged to follow his occupations; the woman took the medicine for a fortnight with apparently very good effect, and was discharged to her home on the 22nd, convalescent. In both these cases the action of the kidneys appeared to me to be decidedly increased.

Remarks.—Now the use of these diuretics in cases where what are called expectorants are commonly chosen, seems worthy of trial in many cases of chronic pulmonary catarrh, simple or complicated. There is no use, I think, in stimulating action in the exhalent surfaces or secreting vessels of the air-passages by means of expectorants, except in the acute or actively inflammatory stages and states of catarrhs of the lungs. When the disease has become indolent, chronic, or passive, the best treatment is that which is most analogous to the proper management of other habitual fluxes or excessive discharges; namely, first, by direct repression of the disease by inhalation of appropriate vapours or gases, or circuitously by means of astringents, such as lead, alum, zinc, or copper, by the stomach, &c.; and, secondly, by derivatives which cause determinations of blood, and of nervous action to other organs and tissues, and therefore away from the surface of the air tubes; such are emetics, purgatives, blisters, warm-baths, &c. This view is confirmed by the partiality of some of the first authorities of the profession to several drugs which are unquestionably diuretics, and are also supposed to be possessed of expectorant powers; I mean squill, terebinthinates, par-

ticularly copaiba and other balsams, lobelia, nitrous ether, &c. &c. The occasional efficacy of each of those in chronic catarrh is unquestionable, and the diuretic property of each of them is quite certain, but their expectorant power in some measure, if not altogether, hypothetical. The view I am now explaining is further confirmed by the fact, that in chronic catarrhs, antimony, and tartar-emetic particularly, are rarely employed as expectorants merely, while ipecacuan is less frequently used very much and less successfully, I am satisfied, than in acute bronchitis; yet none can doubt the power of either of those over acute inflammations of the pulmonary surfaces or substance.

GANGRENE OF THE MOUTH.

The next case I shall bring under your notice is a case from Davey's ward of gangrene of the mouth, nearly the cancrum oris of the old writers, occurring in a weakly child of three years of age. The patient was admitted January 21st with cough and fever of a low character, so that a little wine was ordered for him by the resident physician on his admission. I examined the chest a day or two after his admission with some care, with a suspicion that some organic mischief existed from the account I received, and the appearance and mode of breathing; evidence of tuberculation was readily detected in the top of the right lung, and there was little room for doubt that the fever was symptomatic merely. This child was consequently treated as a phthisical subject with animal food, such as should be found to agree best on trial, beginning with fish, and, as before mentioned, a little wine daily. On the 9th February I ordered five grains of tartrate of iron every four hours, instead of a mixture of aromatic spirit of ammonia and paregoric with mucilage. On this plan he seemed stationary nearly, feeding well, and sleeping pretty well, but looking ill, and not gaining flesh, until the 22nd, when some swelling of the right cheek was observed by Dr. Boyd, which went on increasing with little apparent suffering to the child, and without almost any reaction. Next day I became aware of the swelling, and prognosticated pretty confidently the mischief impending, or rather insidiously begun: proper means, local and general, were then employed, but the child sank on the 25th, feeding to the last nearly.

Early in the current session a similar case occurred in the same ward, and the resemblance extended to so many particulars that the present case reminded me early of the former. This subject also was a boy; he had in like manner tuberculation at the top of the right lung; his gangrene was in the same cheek; he was of somewhat similar age; there was the same absence of active suffering and constitutional irritation; the appetite, as in the present case, continued to the last. The gangrene in the former case, however, extended quite through from surface to surface, occupying the whole cheek nearly from the zygoma to the lower jaw; several of you must have seen the case I allude to; he was admitted Nov. 13th and died Nov. 30th. The treatment of these cases is very rarely successful, and principally, I believe, because it occurs only or mostly in broken cachectic subjects, whose constitutions have lost the spring and elasticity that are necessary to recovery, under the best directed efforts and happiest combination of influences and remedies. The best method of treatment is with constitutional strengthening means and diffusible stimulants, such as cinchona, ammonia, camphor, wine, &c., conjoined with the local application of astringents, escharotics, and even in some cases the actual cautery to the inside of the cheek, &c.

HALLUCINATION AND EPILEPSY.

There was a case amongst the discharges of the last week which had been about three weeks under treatment for mental hallucination, connected with fits, which I must notice. This woman was fifty-seven years of age, and had for nine years been subject to occasional fits of an epileptic character. The night before her admission she had one, and after her recovery from the fit her mind was affected; she said that she had been bewitched by somebody in the workhouse; on every other subject her mind appeared to me quite clear, but on this subject she never hesitated; she seemed quite satisfied of the reality of her fancy. I listened to her story gravely, not attempting to dispute with her about it, as I knew I might add to her excitement materially by doing so, and that I should certainly not succeed in undeceiving her. On examining her person, I found the head hot, the carotids full, and resisting compression strongly; her manner and expression indicated excitement; she complained of headach. She was put on broth diet, and was cupped on the nape to eight ounces, and had a senna draught immediately. Cold was then applied to the head, and light antimonials were ordered. In a day or two the head was much relieved, and she told me that she had no trouble from the witch after the second day of treatment. On the fifth day, however, I cupped her again to eight ounces, and on the ninth day all trace of determination to the head was gone, and weakness only remained: her hallucination had disappeared some days earlier.

Remarks.—This witchcraft is a common fancy of this class of wrongheads, or a common form of what is now called monomania. We have another example of the illusion up stairs at this moment: it is a case you have all seen in Alderton's ward, of a

woman of seventy-eight, admitted January 24th, with head symptoms, like those of the case just detailed. This old lady assures me that for a long time the spirit of some person that is dead has lain on her, and caused her sharp pain in every part of her body, so that she suffers torture from it. The oddest feature in her case is perhaps this, that though a Protestant she says none but a Roman Catholic clergyman can release her from the spirit. We meet strange things in the practice of physic; facts stranger than fiction: but few things in physic are stranger than the phantoms of the crazed mind. There was formerly (now many years ago) an official register kept by the house-surgeon of this infirmary, of the illusions and airy visions of the inmates of our vesanial wards, and it contained some curious matter. Witchcraft frequently recurred in it, but of course amongst various other dreams. In the very same ward in which the former woman was located, I met the following examples, amongst others, within a few years, while it was a male ward. One day, on entering the men's vesanial, I saw a patient sitting up in his bed, covered over with the bed clothes; he was moaning sadly. I asked what was the matter, and he whined out that he had wrapped himself up because of the cold, for the angels he said were pouring water on him down from the ceiling; and he added, he thought it very unkind of them, as he would not serve them in such a manner. In the same ward, not long after, was a man (a quondam campaigner under the Duke in the Peninsula) who, after being some time in the house, had become comparatively tranquil, from a state of cerebral excitement and even dangerous violence. His thoughts always savoured of the magnificent. He took a fancy to me, and promised to make a man of me. He told me he was going to take a tour on the continent, with the royal family in his suite, and he intended to appoint me travelling physician to the party, at a salary of 10,000*l.* per annum. Another day he told me he had a famous plan for the poor, about whose wants he often spoke with apparent feeling. He said he intended soon to put gunpowder under all the towns in England, and blow them up, to make work for the poor in rebuilding them. I do not mention these things for the idle purpose of raising a titter. My object is very different, namely, to excite curiosity in you respecting the inmates of our vesanial wards. I can assure you, that amongst the ten or twelve, or more, persons commonly, for a longer or shorter period, under treatment in that part of the infirmary, you will often meet with facts of high interest. I now draw your attention to them in this pointed way, because they are, so far as I have seen, less attended to by our pupils than other wards, and less, I think, than they deserve. Those wards will show you that, as in the two cases just alluded to, so in most cases, if not all, madness, in whatever form and degree, involves some cerebral disturbance more or less amenable to medicine and professional care. You will see in them the effects of bleeding, antimony, mercury, stimuli, opium, cold applications, &c., administered on the same general principles as in other diseases, though with important differences as to degree of activity, mode of combination, and other details. It is very much during the acuter states, when medicine has most direct power, that our insane patients are admitted, being passed to various asylums, when confirmed or chronic. If you are ever called before a court of inquiry respecting lunacy, &c., you will feel the advantage of having familiarised yourselves with the signs and effects, physical and moral, of mental derangement. Let me add one more reason or inducement to watch the patients in these wards. It is this:—In all ages medical men have been large contributors to the progress of science; every department of human thought and research is indebted more or less to medical learning and talent; and none more than mental science, for which perhaps more has been done by medical men than by any other class of men whatsoever. Not to go too far a field, I may refer to our great reformer Locke as a physician. His system has gone to pieces now some time since, and out of the fragments have been constructed, as a French philosopher (Baron Degerando) has clearly shown, some seven or eight different and jarring systems or sub-systems. But the business of reform in mental science has been resumed on other and sounder principles, and by a physician, I mean Dr. Gall; and phrenology, or the science of mind, when it shall have been disencumbered of numerous cruditi[illegible] heaped on it by its founder for the most part, will, I make no doubt, generally be regarded as the only system before the public that makes any tolerable approach to what the enlightened common sense of mankind can recognise as real in science, or useful for practical purposes. Now it was the study of insanity very much that gave Gall the clue: mad people are unconscious witnesses against, and telling illustrations of, the unsoundness of the earlier systems. But I have said more than enough on the point, and must conclude with this, which, if you will, you may consider an apology for alluding to such things as philosophy and mental science in this place of sickness and suffering, or for a moment turning your attention away from practical medicine,—and it is this. Having been for many a long year a physician and practitioner before I had been able practically to study insanity, owing to the exclusion of lunatics, &c., from our hospitals, and of medical students from our lunatic establishments, I have

personally experienced the want of that familiarity with mental disease against which I now warn you in time, to provide yourselves as to a considerable extent, you may in a moderate period in those wards.

CRAMP IN THE STOMACH.

To the Editor of THE LANCET.

SIR,—I send you an account of a mode of arresting cramp in the stomach, which I am not aware has been used by any other medical practitioner.

About eight or nine years since I had a patient in Glasgow, a married lady, about thirty years of age. She had had a large family previous to my acquaintance with her, but had for many years been subject to violent attacks of cramp in the stomach; on account of one of which I was first called to see her, and at which time I thought she would have died. I need not enumerate the antispasmodics which were used at that time; having then and subsequently tried all those recommended for the complaint, without being able to say that I had succeeded in even checking the spasm for the time. It seemed eventually to wear off of itself. I had bled her, which gave relief for once; but it was followed by such weakness, that when called to witness another attack two or three days after, I dared not repeat it.

The thought, by and by, crossed my mind, that I could produce a counter-spasm; so I took a strong tumbler, and with a bit of lighted paper applied it as a cupping glass over the stomach, when almost immediately I had the satisfaction of hearing my patient, who could not speak a moment before, exclaim, "The pain is gone." Since that time it has invariably been a source of relief with her when attacked; and I do not recollect of its ever failing, if a large cupping glass was applied firmly once or twice over the part.

Your obedient servant,

ROBERT GRAHAM, Surgeon.

Helensburgh, March 1, 1842.

THE PHYSIOLOGY AND PATHOLOGY OF THE SALIVA.

By SAMUEL WRIGHT, M.D. Edin., F.S.A., Physician to the Birmingham General Dispensary, &c. &c.

(Continued from page 789.)

OF the fatty acid I have nothing further to say, than that it appears to increase the odour of ptyalin, and is, perhaps, in some combination with it; for in healthy saliva, which is constantly alkaline, this fatty acid is always obtained unsaturated, in the process which I have employed for its removal. Though in the saliva it may have been neutralised by the soda present, in which case the fluid would not be rendered neutral, as the proportion of soda is always greater than that of the fatty acid. Supposing it to be neutralised in the saliva, the decomposition may perhaps be effected in its removal by the ether, in the same manner as water decomposes subacetate of copper and chloride of antimony. I offer this merely as a conjecture, for it is difficult to imagine a free acid and alkali existing in the same solution, without each entering into chemical combination with the other.

Another principle peculiar to saliva,* upon which much stress has been laid, is sulphocyanogen. Treviranus (Biologie, iv., 565,) first observed the blood-red colour which saliva acquires on the addition of a neutral per-salt of iron,† and believed it to be produced by a constituent, denominated by Winterl "acide du sang," and which Porret afterwards proved to be hydrosulphocyanic acid. The observations of Porret were subsequently confirmed by Gmelin, and afterwards by Ure, though the conclusions were doubted by Kuehn, who was unable to obtain sulphuric acid from the supposed sulphocyanogen, by the process either of Gmelin or Ure; and he further believed, that the red colour produced by the addition of a per-salt of iron to the saliva, is referrible to the presence of acetates. (Kuehn, in Schweigger's Journal, lix., 378; Schultz, de Aliment. Concoct. Berol., 1834.) Kastner very judiciously meets Kuehn's objection with the fact, that the colour produced by acetic acid on a per-salt of iron, is not distinctly blood-red; and he might have added, as a stronger argument, that acetates are very rarely met with in the saliva. This subject has lately been investigated by Dr. Golding Bird, who advises the production of sulphuric acid, as conclusive of the presence of sulphocyanogen. He says, "If any specimen of saliva capable of reddening the per-salts of iron be acidulated with nitric acid, mixed with chloride

* Peculiar to saliva in comparison with other *animal* fluids; it exists in the seeds and blossoms of the cruciferæ.

† The quantity of mucus and albumen existing in saliva often obscures the action of a salt of iron upon it. And to the impediments which they furnish, or to an examination of morbid specimens of saliva, may perhaps be attributed Müller's failure with the iron test, which he says produced only a "yellowish-red," or "rust red" (loc. cit., 125, 515). To ensure the full effects of the reagent, it is advisable to use either filtered saliva, or an alcoholic solution of its dried residue. Even with the ordinary mode of testing, Pereira says, "in a large majority of cases, I find saliva is distinctly and unequivocally reddened by the per-salts of iron." (Elements of Materia Medica, vol. ii., p. 1287, 8.)

of barium, and filtered, no change will occur until the mixture be warmed, when sulphuric acid will be formed at the expense of the sulphocyanogen, and a copious precipitate of sulphate of barytes will occur" (loc. cit. 643) * He suggests, however, that the sulphuric acid might possibly be obtained from the sulphur of the albumen existing in saliva. This I doubt; for never from healthy saliva, which has had its sulphocyanides removed by alcohol, have I been able to obtain in the process of decomposition, any, even the minutest, indication of the presence of sulphur. An elegant form of experiment has been suggested to me by my friend Dr. Percy, professor of organic chemistry in the Royal School of Medicine, Birmingham, which effectually supersedes Dr. Bird's objection, and constitutes, with the ferruginous test, a most satisfactory *experimentum crucis*, demonstrative of the existence of sulphocyanogen as a constituent of the saliva. Dr. Percy advises that the saliva be carefully evaporated to dryness, and its residue exhausted with alcohol; the alcoholic solution will contain ptyalin, osmazome, lactates, chlorides, and sulphocyanides. Of these constituents, the last only will be affected by the test, which consists in liberating within the fluid contained in a test-tube nascent hydrogen: this gas, at the moment of its escape, decomposes the sulphocyanogen, and uniting with its positive elements, forms sulphuretted hydrogen, which may be recognised either by its smell, or by its action upon paper moistened with a sub-salt of lead.

Sulphocyanogen, as it occurs in human saliva,† exists in combination with potassium; and the salt constitutes from .051 to .098 per cent. of the fluid. The proportion is temporarily augmented by local stimulation of the salivary glands, as in smoking, chewing sialagogues, &c. It is also increased by the internal use of prussic acid and salts of cyanogen, and remarkably so by the use of sulphur. In some of the morbid varieties of saliva, as I shall hereafter prove, sulphocyanogen is not present.

Saliva, after dilution with water, deposits a flaky precipitate. In Dr. Bostock's analysis, it amounted to .4 of the whole solid matter. (Nicholson's Journal, xiv., p. 148.) This precipitate is not re-dissolved during twenty-four hours' rest and exposure: by long boiling the flakiness is destroyed; but on cooling, the deposit again occurs in a more compact and granular form. It is not readily soluble either in acids or alkalies.

If saliva be moderately heated with its own volume of milk, no coagulation is observable during twelve hours: cream collects at the top, and the subjacent fluid is feebly lactescent. (Tiedemann and Gmelin, loc. cit., p. 6, n.) Veratti (Comment. Instit. Boniens. Op., t. vi., p. 272,) says, that the saliva of *young persons* coagulates milk when heated with it to the temperature of 90° Fahr. This is correctly denied by Spallanzani. (Sennebier, Considerat. sur la Digestion, p. 103.)

Saliva requires a much lower temperature than water for freezing. (Hoffmann de Salivæ Inspect.; Johnson's Animal Chemistry, i., p. 237.) I have never seen a healthy specimen of saliva resist a cold of 10° Fahr; though some of the diseased varieties will remain fluid at 0°.

Saliva has a strong affinity for oxygen: it readily absorbs this gas from the air, and is said to impart it to other bodies. (Fourcroy, Ann. de Chim., xxviii., p. 262.) Du Tennetar says that, owing to this property, silver and gold may be oxidised by being triturated with saliva. (Fourcroy, loc. cit.) It was long ago observed that the oxidation of mercury, in the process of manufacturing its ointment, is much accelerated by spitting into the mortar; and that copper and other metals are more corroded by saliva than by pure water. (Textor., p. 41, 42.) A familiar example is to be found in the injury which polished fenders and fire-places receive from smokers who are accustomed to much spitting.

Pure saliva usually absorbs about its own volume of oxygen, though the ratio is liable to much variation.* I have known the quantity absorbed to exceed two and a quarter times the bulk of the saliva; but I once

* A similar form of experiment is suggested by Dr. Van Setten, in his thesis, "De Saliva ejusque vi et utilitate," Groningæ, 1837: "The aqueous solution of the alcoholic extract of saliva, having been evaporated and distilled with phosphoric acid, formed a fluid, that, on the addition of per-chloride of iron, exhibited the peculiar red tinge, characteristic of sulphocyanuret of iron: when disappearing, the colour was restored by the addition of hydrochloric acid. Again, on adding to the distilled liquid a mixture of hydrochloric acid, chloride of potassium and barium, sulphate of baryta was formed; its acid resulting from the oxidation of the sulphur contained in the sulphocyanic acid. The result is rendered still more certain by the fact, that the substance thrown down from the distilled fluid by the sulphates of iron and copper, acquired, when washed and mixed with potassa, the same red tint on the addition of per-chloride of iron." (Brit. and For. Med. Rev., 1839, vol. vii., p. 236.)

† Sheep are said to be the only other animals in the saliva of which sulphocyanogen exists. (Müller, loc. cit.) I have detected it in the saliva of the dog and of the horse.

* I wish it to be particularly understood that in this department of my subject I am treating of the properties of saliva in its *healthy condition*. In the pathological section it will be shown that saliva, in many of its diseased states, has little or no affinity for oxygen.

met with an instance in which the healthy secretion did not absorb more than half its volume of oxygen. This difference is generally dependent upon the carbonic acid gas naturally contained in the saliva, the proportion of which gas to the secretion varies from one-eighth to one-twelfth in volume, though in some examples it is much more abundant. Saliva is not unfrequently acidified by the absorption of oxygen, and its natural odour is invariably heightened thereby. Filtered saliva absorbs oxygen in nearly the same proportion, but it acquires scarcely any increase of smell. Carbonic acid gas is absorbed by saliva in the same ratio as oxygen; but of hydrogen and nitrogen, saliva rarely absorbs more than one-twelfth or one-tenth of its volume.

If saliva be exposed to atmospheric air, at a temperature of 60°, it readily undergoes the putrefactive fermentation (Comm. Acad. Petrop., t. xiv., p. 210): the period at which decomposition commences, varies from three to seven days; and the ptyalin is always the first to suffer. Ammonia is usually formed during the process of decay; but if the saliva have previously been heated to 212°, it decomposes very slowly, and the produce of destruction is generally an acid. The addition of an acid to saliva also assists in its preservation; whilst caustic alkali, which almost immediately causes the evolution of ammonia, promotes rapid decomposition. If saliva be carefully evaporated to dryness, it will retain its odour and properties in an unimpaired state for many months.

When distilled in a retort, saliva froths abundantly, and yields a quantity of water, the proportion of which has been differently stated. Nuck (Anat. Saliv., p. 54,) estimates it at $\frac{12}{36}$ of the whole fluid; Boerhaave (ad n., p. 66,) at $\frac{80}{100}$; Van Swieten (loc. cit., t. i., p. 679,) at $\frac{475}{500}$; and Thomson (Chemistry, iv., p. 517,) at $\frac{80}{100}$. I believe Dr. Thomson's calculation to be the most accurate, about 80 ounces of nearly pure water* may be obtained from 100 ounces of saliva; but if more be drawn over, it will contain an empyreumatic oil, and other animal matter. By destructive distillation, saliva furnishes a little carbonate of ammonia, some oily matter, and an acid, which Thomson believes to be the prussic. I have obtained the acetic and the lactic acid by distilling saliva destructively, but never the hydrocyanic; though I have several times detected the latter in saliva, which had undergone spontaneous decomposition.

The salivary matter left after the destructive distillation of saliva, consists chiefly of phosphates and chlorides, with a little carbonate. According to Tiedemann and Gmelin (Rech., p. 7,) this residue amounts to from 1.14 to 1.19 per cent.; Berzelius estimates it at 1 per cent.; Thomson, at 1.56; and Brande, at from 0.9 to 1.19. The proportion is liable to some variety, but the range will generally be found between 0.8 and 1.8 per cent.

Saliva is variously affected by reagents. It is abundantly coagulated by sulphuric, nitric, and muriatic acids; feebly by oxalic, citric, tartaric, carbazotic, fluo-silicic, and formic acids. None of the precipitates so obtained are soluble in water, or in ammonia. Alcohol forms with saliva a flaky coagulum, insoluble both in water and in ammonia. Sulphuric ether forms an imperfect coagulum. Caustic potassa coagulates saliva, giving it a pinkish colour, which degenerates into a dirty-brown, the odour of ammonia being at the same time evolved. Caustic soda and lime coagulate it more feebly. Saliva is also coagulated by the chlorides of tin, gold, platinum, palladium, iron, and cobalt; by the nitrates of silver, mercury, and lead; by the sulphates of copper, iron, and zinc; by per-chloride of mercury; by acetate and subacetate of lead; by ferrocyanuret of potassium; by the bicarbonates of soda and potassa, and by tincture or infusion of galls. It is slightly coagulated and deeply coloured by iodine, of which it dissolves a much greater quantity than pure water does; it mixes imperfectly with oils (Narcissus de chylo.), and is said to dissolve Peruvian balsam very readily. (Birr. Spec. Anat. Bot., ii., n., p. 58.)

Chemical Composition.—Saliva has repeatedly been made the subject of chemical analysis. According to Berzelius, it consists of—

Water	992.9
Ptyaline	2.9
Mucus	1.4
Osmazome, with lactate of alkali	0.9
Chloride of sodium	1.7
Soda	0.2
	1000.0

In the analysis of saliva by Tiedemann and Gmelin, there were obtained from 1.14 to 1.19 per cent. of solid residue: this yielded 0.25 of ash, of which 0.203 were soluble in water, and 0.047 were earthy phosphates. One hundred parts of the residue of saliva furnished the following constituents:—

"1. A substance, soluble in alcohol, and insoluble in water (fat containing phosphorus.)

"2. Matters soluble both in alcohol and water (osmazome, chloride of potassium, lactate of potass, and sulphocyanuret of potassium) 31.25

* Of this water I once injected four ounces into the right common carotid artery of a mongrel dog, weighing 16 lbs., without the production of any obvious effects.

"3. Animal matter soluble in boiling alcohol, but precipitated on cooling, with sulphate of potass and a little chloride of potassium..... 1.25

"4. Matters soluble in water only (salivary matter, with abundant phosphate, and some sulphate of an alkali and chloride of potassium) 20.00

"5. Matters soluble neither in water nor in alcohol (mucus, perhaps some albumen, with alkaline, carbonate, and phosphate) 40.00

92.50"

In the "Journal de Chimie Médicale," April, 1833, is an analysis of the saliva of spontaneous ptyalism, by M. Gibourt. It was found to consist of—

"1. Some *mucus*, such as M. Berzelius has defined it, characterised by its insolubility in water, the great quantity of this liquid which it absorbs and retains in its natural state, and the great quantity of calcareous phosphate which it yields by combustion.

"2. A particular animal matter, which accompanies at once the salts soluble in alcohol and those soluble in water. This substance approaches very near to gelatine by the odour which it yields on burning, and in its precipitation by means of gall-nuts; but it differs from gelatine by this same precipitate, which is pulverulent, and not tenacious and elastic as that produced by gelatine, because it is not precipitated by chlorine; and lastly, because it does not form jelly when concentrated: it is not, therefore, gelatine. It is not osmazome, if by this term we understand a compound extractive possessing smell and taste, which evidently contains a great number of principles foreign to animal matter, properly so called; but it is, as I think, the azotised matter of osmazome, separated from the salts and from the odorous principle usually accompanying it; and what proves to me that this odorous principle is not essential to it is, that the portion of this substance which followed the salts soluble in alcohol, was possessed of the well-known odour of osmazome; whilst that which was dissolved in the water, and which differed not from the former, was destitute of it.

"3. Albumen in the state of solution, presenting in the dried saliva several of the characters of mucus, and sensibly yielding like it a considerable portion of phosphate of lime by its decomposition in the fire; but this I attribute to the circumstance of the mucus not being completely insoluble in the saliva: so that this liquid, when filtered, contains a small quantity of it, besides the albumen and the other animal matter.

"4. Soluble salts, which are chlorides of sodium and potassium, some lactate of potassa and soda, a salt of lime, some phosphate and sulphate of soda." (Quoted in Dub. Journ. of Med. and Chem. Sc., 1833, vol. iii., p. 435, et seq.)

Dr. Van Setten (De Saliva ejusque vi et utilitate., Diss. Inaug. Groningæ, 1837,) in his analysis of saliva, agrees pretty closely with Tiedemann and Gmelin. One hundred parts of pure saliva furnished him with 1.62 of solid residue. This he found to consist of—

a. "Matter precipitable by water from the alcoholic extract, probably phosphorous fat.

b. "Matter soluble in cold alcohol and in water, containing osmazome, sulphocyanide, and chloride of potassium, and acetate of potass 36.84

c. "Matter precipitated by cooling from hot alcoholic solution, containing animal matter, and an alkaline sulphate and chloride 4.72

d. "Substance soluble in water alone, consisting of the salivary principle and some salts 15.62

e. "Substance insoluble in water and alcohol..... 43.44"

(Brit. and For. Med. Rev., 1839, vol. vii., p. 236.)

Raspail believes the saliva to be more simple in its composition. He says, "La salive ne me paraît qu'une solution albumineuse, mêlée à divers sels susceptibles d'en altérer plus ou moins la solubilité dans l'eau; et à des lambeaux de tissus." (Chimie Organique, p. 454, 5.) In this opinion Dr. Golding Bird, in some degree, participates. From his investigations he concludes that "saliva may be regarded as composed of the following ingredients:—

"1. Those common to other animal fluids.
Insoluble albumen, combined with soda.
Chloride of potassium, and perhaps sodium.
Phosphate of lime.
Silica.

"2. Those proper to saliva, and distinguishing it from analogous secretions.
Sulphocyanogen.
A peculiar albuminous principle (ptyalin)."

The saline constituents of saliva are, according to Mitscherlich—

Chloride of potassium .. 0.180 per cent.
Potash, combined with lactic acid 0.094
Soda 0.024

Lactic acid.
Soda, probably combined with mucus..... 0.164 per cent.
Phosphate of lime..... 0.017
Silicic earth 0.015

The following is the process which I have found to be most available in the analysis of healthy saliva. I fear it will prove, like the many suggestions which have preceded it, to be liable to numerous objections; but if these shall be remedied by the observations of future inquirers, I shall feel myself not a little honoured in having directed the attention of abler minds than my own, to the consideration of this interesting and important subject.

The saliva is to be filtered through moderately-coarse filtering paper. On the filter will remain a solid residuum (1), and a clear liquid (2) will have passed through.

Examination of Solid Residuum (1).—It is to be washed thoroughly on the filter with ether, when a residue (A) will be left, and an ethereal solution (B) will be obtained.

Examination of (A).—Exhaust with cold distilled water; this dissolves the chlorides of sodium and potassium (*a*, *b*), which may be obtained by evaporation.* The matter left upon the filter is to be dried, weighed, and then incinerated. The amount of loss thus occasioned indicates the proportion of free albumen† (*c*). A little ash remains, from which distilled water extracts carbonate of soda (*d*), and leaves phosphate of lime (*e*).

Examination of (B).—Evaporate carefully to dryness. Wash the residuum on a filter with distilled water, and continue to treat with this menstruum until everything soluble in it is removed. The aqueous solution is next to be evaporated to dryness, when a residue of pure ptyalin (*f*) will be obtained. The matter left upon the filter is a fatty acid (*g*), which is to be dissolved in sulphuric ether, from which, by evaporation, it may be obtained in a pure form.

Examination of Filtered Liquid (2).—This liquid is affected neither by boiling nor by nitric acid; yet it contains albuminate of soda (*h*), which can only be separated by means of galvanism. To this end, it is advisable to reduce the liquid, by very careful evaporation, one-third in volume, and then to introduce the wires of a galvanic battery in action: free soda will collect upon the negative pole, and coagulated albumen upon the positive one. In this manner all the albuminate of soda may be removed without decomposing the chlorides.

The liquid having been thus treated, is next to be very carefully evaporated to dryness, and the dry residuum exhausted with ether, which dissolves the lactates of potassa and soda (*i*, *j*), and sulphocyanide of potassium (*k*).* These salts, having been dried and weighed, are to be dissolved in distilled water, and subacetate of lead† is to be added to the solution until it shall cease to afford a precipitate. An insoluble sulphocyanide of lead will be deposited, and a soluble lactate will remain in solution. The former, after having been dried and weighed, will indicate the proportion of sulphocyanide of potassium previously existing in the saliva; and by subtracting this weight from that of the original saline matter, the quantity of lactates will also be determined.

The residuum from which these salts have been separated is to be treated with alcohol, which will remove the remaining chlorides of sodium and potassium, the weight of which is to be added to that of (*a*, *b*).

After the extraction of the chlorides, the soda, which remains in the form of carbonate, is to be neutralised by acetic acid, and the salt dissolved out by alcohol: by evaporating the alcoholic solution to dryness, and exposing the salt to a red heat, the acetic acid will be destroyed, and the soda (*l*) left.

The remaining solid matter is to be dried, weighed, and incinerated. The loss by incineration determines the amount of mucus (*m*).‡

The saline matter left is to be boiled in distilled water, which will generally remove a little sulphate or phosphate of potass or soda—usually a phosphate of soda (*n*).

The last residuum will be phosphate of lime: its weight must be added to that of (*e*).

Silica is mentioned as a constituent of saliva. I have never met with it, though I have occasionally discovered a trace of iron.

The analytical process just described will perhaps be rendered more intelligible by a reference to the annexed diagram.

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* Owing to imperfection in the filter, I have once or twice found a little albuminate of soda along with the chlorides. If its presence be suspected, the saline matter should be re-dissolved in distilled water, and the decomposition effected by galvanism, as described further on.

† Dr. Bostock calls it *coagulated albumen*. I am unable to comprehend his reason for so doing, inasmuch as the albumen is in a liquid state, and is coagulated only by heat and by the action of reagents. I have denominated it *free albumen*, to distinguish it from the albuminate of soda which passes through the filter, and is to be found in solution (2).

* Sometimes, owing to undue coarseness of the filter, a little ptyalin will be present. It may be separated by the process suggested at p. 788, note.

† Nitric of silver will answer as well if the solution be very dilute.

‡ As I have previously said, this mucus almost always attaches to itself a portion of ptyalin.

- Saliva—filtration
  - 1. Solid residue
    - 1. Ethereal solution evaporated
      - Aqueous extract—Ptyalin.
      - Ethereal extract—Fatty acid.
    - 2. Aqueous solution evaporated
      - Chloride of sodium.
      - Chloride of potassium.
    - 3. Residue incinerated
      - Loss.....Albumen.
      - Ash
        - Soda.
        - Phosphate of lime.
  - 2. Filtered liquid
    - 1. By galvanism.....Albuminate of soda.
    - 2. Filtered liquid dried
      - 1. Ethereal solution evaporated
        - Lactates.
        - Sulphocyanides.
      - 2. Alcoholic solution evaporated
        - Chloride of sodium.
        - Chloride of potassium.
      - 3. Residue neutralised by acetic acid —alcoholic extract incinerated .....Soda.
      - 4. Residue by incineration
        - Loss.....Mucus.
        - Ash
          - Phosphate of soda.
          - Sulphate of soda.
          - Phosphate of lime.

This mode of analysis has furnished me with the following proportion of constituents in healthy saliva :—

Water	988.10
Ptyalin	1.80
Fatty acid	.50
Chlorides of sodium and potassium	1.40
Albumen with soda	.90
Phosphate of lime	.60
Albuminate of soda	.80
Lactates of potass and soda	.70
Sulphocyanide of potassium	.90
Soda	.50
Mucus with ptyalin	2.60
Loss	1.20
	1000.00

It is advisable to take a second portion of saliva from the same individual, and, after having evaporated it carefully to dryness, to compare its loss of weight with the proportion of water in the systematic analysis.

I have made about twenty analyses of healthy saliva, and I must confess that not any two of them have *exactly* corresponded. The proportions of ptyalin, soda, mucus, chlorides, and sulphocyanides, are continually changing; and on this account it is that variations in simple weight are ever to be expected in the process of analysing saliva. So long, however, as the proportions do not materially differ, and there are no morbid principles discovered, trifling numerical deviations are of little consequence.

Ratio of the Healthy Secretion.—The quantity of saliva secreted by a healthy individual in a given space of time has been variously estimated. Nuck says (Sialographia, p. 29), "Experientia namque constat, hominen adultum in statu naturali, duodecim horarum spatio, uncias decem, aut libram integram, hujus salivæ exspuendo reddere posse." According to Plenck (Hygrologia, p. 57), "Quantitas ad integram usque libram intra duodecim horas secerni putatur." Lanzonus (Diss. de Saliva Hum., cap. ii., p. 38, seq.) gives the same proportion as Nuck. In Mitscherlich's experiments upon the man who had a fistulous opening into the Stenonian duct, it was found that from sixty-five to ninety-five grammes (from two to three ounces troy) of fluid were discharged by one parotid in twenty-four hours (Mitsch. über den Speichel. des Menschen., Rust's Mag., 1832). Dr. Fordyce estimated the quantity of saliva secreted during a full meal at only an ounce or two; "but persons who have attempted suicide have been known to discharge from eight to ten ounces of saliva at the wound whilst feeding." Sir James Murray is of opinion that "about half a pound of saliva is secreted during a meal" (Diss. on the Influence of Heat and Humidity, &c., 1829, p. 53). Others have said that the daily secretion does not exceed that quantity. (Nicolai, Mat. Med., p. 177-179.) I should be inclined to regard the estimate of Nuck as the most accurate; but for many reasons the proportion of saliva secreted in a given space of time must ever be liable to much variation. This remark applies both to man and to inferior animals. "From the existence of the relation between mastication and the salivary secretion, the latter is always most copious in those creatures whose food requires continued mastication. In ruminating animals, accordingly, the salivary glands are numerous and of great size, while they are at the same time so situated that the play of the muscles in the act of rumination communicates to them a proportionate stimulus. In those again which do not masticate at all, but swallow their food entire, there is scarcely any salivary secretion, and the glands appropriated to it are very small."* (Combe, Physiology of Digestion, p. 48, 9.) Hence it will be found that in a healthy person the quantity of saliva secreted will depend upon the amount of food eaten, upon its hardness or toughness, its stimulating properties, and the time required for or occupied in its mastication. For this reason, an individual who eats much will, *cæteris paribus*, secrete more saliva than one who eats little; and a solid meal will promote a more abundant secretion than a fluid one.† Indeed, in the absence of any action of the muscles concerned in mastication, the secretion of saliva is very trifling. Mitscherlich found that when the tongue and muscles in its neighbourhood were completely at rest, the salivary secretion was scarcely observable. This is a fact with which the older writers were perfectly familiar. "Ad oscitationem proni post eam sæpe experiuntur, os saliva abundare; quod non aliunde, quam quod musculis, quibus oscitatio peragitur, simul et glandulæ et glandularum ductus salivales comprimantur; unde omnis, quæ in iis continetur, saliva; os versus demandatur." (Nuck, Sialographia, p. 40.) "Saliva motu expressa. Actione musculorum, quibus diversi salivæ fontes subjiciuntur." (Boerhaave, Prælec., p. 144.) "Parotis adeo a musculo massetere succutitur, et a colli latissimo, a maxilla demum ipsa, quæ non potest vel seorsum vel deorsum, vel ad latera moveri, quin parotis prematur." (Haller, Element.

* Birds, and many fishes and reptiles, are of this class.

† And not only the *quantity* but the *quality* of the saliva is influenced by the process of mastication. In healthy people, the alkalinity of the saliva is generally in the direct ratio of the muscular effort in the action of chewing. Hence it is that grooms and soldiers relieve the pain of heartburn by eating horse-beans. Some people chew india-rubber and swallow the saliva with the same intention.

Physiol., tome vi., p. 56, edit. Lugd., 1764.)

The secretion of saliva is also peculiarly influenced by any local excitement of the nerves which contribute to it; as, for instance, by tying, pinching, or irritating any of the larger branches of the fifth pair. "L'excitation paraît se propager aux glandes salivaires par les nerfs de la seconde et de la troisième branche de la cinquième paire, et déterminer ces organes à fournir une sécrétion plus copieuse." (Tiedemann et Gmelin, Op. Cit., p. 4.) Under these circumstances, however, the saliva is generally either more frothy or more alkaline than usual. The sight of a dazzling object, or the smell of any agreeable article of perfume or cookery, will vastly increase the action of the salivary glands in some people. "Quando famelico homini gratum ferculum ostenditur, exsilet protinus, cum aliquo impetu limpida saliva, citra omne etiam mentis imperium." (Boerhaave, Prælec., p. 140.) "In esurientibus ab inspectione cibi, majori copia e ductibus salivalibus prosilit." (Plenck, Hygrologia, p. 57.) "La sécrétion salivaire se trouve également activée lorsque les émanations des alimens affectent la membrane olfactive; dans ce cas, l'excitation paraît être transmise aux nerfs des glandes salivaires par le nerf nasal postérieur, qui émane du ganglion spheno-palatin." (Tiedemann et Gmelin, Op. Cit., p. 4.) I am acquainted with a gentleman who regularly cures himself of heartburn by swallowing the abundant saliva which never fails to be secreted when he thinks of a carnation.

Some writers have attached so much importance to simple nervous irritation, as to deny that an increased flow of saliva can be excited by muscular action only. Following the opinion of Stahl (Theor. p. 466), they maintain not only that the action of the lower jaw cannot empty the duct of the gland already filled with saliva, but assert that were a sponge saturated with water to be placed in the situation of the parotid gland, the act of mastication would not discharge its contents. (De Bordeu, De Chylific, p. 19, 28, 35).* There are many facts, however, which disprove this notion. Agitation of the lower jaw by electricity commonly promotes the salivary secretion to a considerable extent (Zetzell Consect. Electr.); and convulsions of the lower jaw are often attended with a profuse discharge of saliva. Cases have occurred in which, after closure of wounds of the Stenonian duct, swelling of the parotid gland, occasionally happening from an accumulation of saliva, was dissipated by the process of mastication. (Mem. de Chir., tom. iii., p. 431.) Indeed, by muscular action the saliva is sometimes ejected with much force, and to a considerable distance. "Longissime projiciebat." (Teichmeyer Menz., De Saliva non temer. exspuend., p. 3.) Blancaardus says he has known it to be projected to the distance of three or four feet after fasting. (Jaareg. Cent. v., n. 14.)

Tying the jugular veins is also said to increase the secretion and flow of saliva." "Venis jugularibus subducto filo in cane arcte ligatis, non solum lachrymas copiosius prodire, sed et salivam tam copiose profluere, ac si mercurio assumto fluxus ille concitaretur; quod non aliunde, quam impedito sanguinis ab arteriis in venas circuitu." (Nuck, Sial., 26, 7; Lower, Tract. de Corde., cap. ii.) I have repeated this experiment several times, but without being able to satisfy myself that the salivary secretion was much affected in consequence.

The influence of imagination and of local stimulants is a sufficiently satisfactory proof that the secretion of saliva may be promoted to a great extent by nervous excitation only; and the increased discharge of salivary fluid which occurs when inodorous and tasteless bodies are masticated, is also conclusive testimony that, by muscular action simply, the secretion may be much augmented. Under ordinary circumstances, I should say that both causes operated in the production of the result.

* For curious speculations concerning the augmentated secretion of saliva on seeing or smelling food, see Theod. Craan (Diss. de Hom., cap. iii., p. 10); Lanzonus (De Saliva, cap. i., p. 16); Journal des Sçavans (tom. viii., p. 94); Bohnius (Circul. Anat. Phys. Prog., viii., p. 128); Zypœus (Fundament. Medicin., part ii., cap. iii., art. 12, p. 106); Neuterus (Physiol., cap. iv., p. 156).

OPIUM-SMOKING IN CHINA.

To the Editor of THE LANCET.

SIR,—Should the following remarks upon opium-smoking be acceptable, I shall feel obliged by your giving them an early insertion in your Journal. They consist of an extract from my private journal, while surgeon of the ship *Sunda*, which, after nearly foundering in a "typhoon" or hurricane in the China sea, was wrecked on the island of Hainan in October, 1839, and whose crew were conducted to Canton under protection of the Chinese government. I remain, Sir, obediently yours,

JAMES HILL.

Peckham House, Surrey,
Feb. 26, 1842.

On the evening of our arrival at the city of Hainan (situated about six miles from the northern extremity of the island of the same name), one of the soldiers forming our body-guard requested permission to smoke his opium in the apartment allotted to the

captain, chief officer, and myself, which, being the first opportunity we had of properly witnessing the whole process, we cheerfully agreed to.

The apparatus, which was inclosed in a leather bag, consisted of a small box of opium, a pipe of a peculiar construction, a lamp, and a steel bodkin about six inches in length.

The opium, which was contained in a wooden box not much larger than a lady's thimble, was a clear, dark, semifluid substance, resembling tar or treacle, though of rather more consistence, and prepared from the crude drug, so far as I could understand, by boiling, straining, and evaporating.

The pipe, which was made of ebony, was about eighteen inches in length, and three-quarters of an inch in diameter, having a brass bowl near its further extremity, which was closed. In shape the bowl resembled a pear, having its upper surface smooth and flattened, with a small aperture in its centre sufficient to admit a needle of moderate size. The use of the lamp and steel bodkin, which need not be described, will be seen presently.

Drawing a table with his apparatus to the side of a bamboo couch, upon which he seated himself cross-legged after the manner of the Turks, our hero began by lighting the lamp, over which he placed a glass shade, to render the flame strong and steady, and prevent its smoking. He then took a small quantity of the drug (of the size of a pea) on the point of the bodkin, and held it for a few seconds in the flame of the lamp, when it swelled and took fire, emitting smoke of a strong aromatic, and not unpleasant odour. Instantly blowing it out, he rolled it for a short time on the bowl of the pipe (by swiftly twirling round the bodkin between the fore-finger and thumb), and again applied it to the flame of the lamp, to undergo the same process two or three successive times. After being sufficiently burned, he next introduced the bodkin into the aperture of the bowl, twisting it gently round so as to detach from its point the opium, which was left adhering to the edges. Lastly, making a deep expiration so as to expel the air as much as possible from his lungs, he put the pipe into his mouth, and applying the bowl to the flame of the lamp, took one long inspiration, by which the opium was almost entirely dissipated, and converted into a dense smoke, which, after retaining in the chest for a short time, he emitted in volumes through the nostrils.

The same process was repeated eight times in the course of twenty minutes, when he lay down on the couch and fell into a profound sleep, which lasted nearly three hours. On awaking, which he did of his own accord, he appeared stupid and confused, and apparently not a little surprised at finding himself in the company of foreigners, when, recollecting himself, he burst into an immoderate fit of laughter.

In the present instance, that of a young man, about 24 years of age, after the second inhalation of the drug, the eyes became full and sparkling, the face began to flush, and the pulse to increase in quickness and fulness; the breathing likewise became more frequent, and the whole system seemed considerably excited. These symptoms continued to increase until the seventh application to the opium pot (which took place about a quarter of an hour after the commencement), at which time the pulse was full and bounding, and beating at the rate of 120 in the minute. After the next two applications, which were completed within five minutes more, though much more dexterously than the previous ones, he appeared quite stupified by the drug, and lying down on the couch, instantly fell asleep.

Being desirous of ascertaining how long he would continue in this state, we did not disturb him, although he snored most profoundly, but allowed him to awake of his own accord, which he did in about three hours afterwards.

Considerable depression now seemed to have followed the previous excitement, the eyes, although still full and projecting, being dull and heavy, and the whole countenance having a languid and stupid expression. The breathing was likewise heavy and oppressed, and the pulse considerably below the natural standard, scarcely beating sixty in the minute. The immediate effect, therefore, of the drug in the present instance, and likewise in every other that afterwards came under my observation, was that of a strong stimulant. This, however, was soon succeeded by a still more powerfully sedative effect, commencing sooner or later according to the habits of the individual. An old hand will frequently smoke for hours before being completely under its influence; while a beginner, as we observed in the case of our cook, will sometimes be stupified by two or three whiffs.

Amongst the Chinese the use of opium is almost universal, at least as far as regards the male portion of the community, and by no means confined to the higher or wealthier classes, being equally prevalent amongst the very lowest, many of whom would rather want their dinner than be deprived of the intoxicating drug. Notwithstanding the severe penalties incurred by those found making use of it, it scarcely ever appeared to be made a secret of, smoking-shops abounding in every town and village through which we passed.

In addition to a tobacco-pipe which each carried along with him, amongst our guard of honour (consisting of a head policeman, as he was called, half a dozen soldiers, four palanquin bearers, and three wheelbarrow men), there were generally to be

found three or four opium pipes, which were made use of occasionally in the course of the day's march. Tobacco, however, was principally made use of during the day, the opium being reserved till the evening, when they would generally commence after supper, and smoke until they could no longer put the pipe into their mouths.

As can readily be imagined, the habitual use of opium, at least as practised by the Chinese, cannot fail to produce the most injurious effects upon the constitution, still more so probably than that of ardent spirits. The peculiar languid and vacant expression, the sallow and shrivelled countenance, the dim and sunken eye, and the general emaciated and withered appearance of the body, easily distinguish the confirmed opium-smoker. The mind, likewise, soon participates in the general wreck of the body; and the unhappy individual, losing all relish for society, remains in a state of sottish indifference to everything around him but the deadly drug, now his only solace, which sooner or later hurries its victim to an untimely grave.

The most inveterate opium-smoker that came under our observation during a journey of two months through the interior of the country, was the head policeman under whose charge we crossed from the island of Hainan to the mainland of China. This individual, who was evidently an old stager, went through the operation with great neatness and dexterity, commencing soon after he came on board the junk which conveyed us across the strait (about five in the afternoon); he continued without intermission till midnight, when tired with observing him, I fell asleep.

The refuse of the pipe is likewise much prized, especially where a superior specimen of the drug has been made use of, and is generally the perquisite of one of the servants, who forms it into pills, by mixing it with a little oil, to which he treats himself while his master is in a state of oblivion.

The poppy is said to be extensively cultivated in some of the southern provinces of China, but during a journey of nearly six hundred miles, embracing the whole extent of Hainan, and part of the provinces of Quang-see and Quang-tung, we never met with a single specimen.

UNDILUTED CREOSOTE IN BURNS.

To the Editor of THE LANCET.

SIR,—It has been my intention for some time to send you a short communication on the use of undiluted creosote in burns, but I have delayed doing so in the expectation that I might be able to try the remedy in a greater number and variety of cases, so as to obtain an estimate of its real value. In the 22nd Number of THE LANCET, however, there is a communication from Dr. Mitchell, of Dublin, on the subject, in which the author requests information from other members of the profession who may have used it, and in consequence of this I shall state shortly the result of my experience.

About two years ago I accidentally dropped some burning sealing-wax on my hand; I removed it as quickly as possible, and applied to the surface a drop of creosote from a bottle which happened to be beside me; it afforded immediate relief, and in less than five minutes the pain was gone. No sensible vesication took place, but in a few days the cuticle peeled off, and left a dry, reddish surface beneath. A short time after this one of my servants burned the palm of her hand by laying hold of a hot iron; in a few minutes creosote removed the pain, and I heard nothing more of it. I have used it in ten or a dozen similar cases, and I have always found it remove the pain in a very short time. The effects I had observed induced me to bring the subject before the Medical Institution of Liverpool (as I find by the minutes), on the 1st of April, 1841, in the hope that such members as had opportunity might give the remedy a trial. I have had no experience of its use in severe injuries, and on this point I can bear no testimony, but in the common domestic burn or scald it has appeared to me so useful that I have recommended its being kept in families for the purpose of immediate application. I am, Sir, your obedient servant,

JOHN SUTHERLAND, M.D.,
Honorary Physician to the
North Dispensary.

Liverpool, Feb. 28, 1842.

P.S.—The best way to apply the creosote I have found to be to brush the surface over with a hair pencil dipped in the liquid, and to renew the application as often as may be necessary; part of the creosote is absorbed, and the cuticle should be kept moistened till the pain is relieved.

NEW OBSTETRICAL INSTRUMENT, THE KEPALEPSALIS.

By WILLIAM CAMPBELL, M.D.,

Fellow of the Royal College of Surgeons, Edinburgh, &c. &c. &c.

To the Editor of THE LANCET.

SIR,—When I inform you that the instrument which bears the above designation is considered by the profession here the most important addition that has for many years past been made to our obstetric inventions, I feel confident that you will give the following description and brief observations regarding it a place in your valuable Publication.

In the operative department of midwifery, a mechanical power calculated to reduce the

skull with as little suffering as possible to the parent and ease to the practitioner, to the necessary extent in cases of the greatest degree of confinement of the pelvis, which would, with safety to the maternal structures, admit of embryotomy, has hitherto been a desideratum which every practitioner who has ever felt or reflected on the difficulties attendant on cases of extreme deformity, must have been most anxious to supply. The plan hitherto adopted, when it became necessary to reduce the skull, has been by means of an instrument upon the principle of forceps with lengthened handles, to remove not by cutting, but by tearing, twisting, or wrenching successive portions of the bones. This procedure, whether in pelves of considerable deformity or otherwise, is attended with so much difficulty, and requires so much force in its performance as to occasion great suffering to the parent and excessive labour to the practitioner; and, moreover, until decomposition to a certain extent has taken place in the fœtal structures, the bones forming the face and base of the cranium cannot be acted on by such an agent.

The late Professor Davis, of the London University, who was an enthusiast in this department of midwifery, and was, moreover, possessed of considerable mechanical talent, laid claim to the invention of an instrument which, to say the least, is ingenious; and were we to take for granted all that he has written regarding it, the desideratum in question might have been considered as completely supplied, since we are informed in the writings of Dr. Davis, that so great was the utility of the contrivance in question, that it could be efficiently used with a pelvis of only one inch of space betwixt the promontory of the sacrum and the symphysis of the pubes; thus "reducing to zero the necessity for performing the Cæsarian section," and so extraordinary its power, that it would cut through "beef-ribs." A superficial but an impartial examination of Dr. Davis's instrument (osteotomist) will at once, however, convince any one that it is an ingenious, though not in every degree a successful attempt, to supply what has been wanting.

I am happy to say that what has been so much required has, in a great measure, if not completely, been supplied by Mr. Simpson, surgical instrument-maker, of this city. The merit of the invention, and which by the profession here is considered great indeed, is entirely due to Mr. Simpson. I claim no share of it, further than having pointed out to the maker how inadequate Dr. Davis's instrument was to accomplish the important object in view; what was particularly required in cases of extreme deformity, and from time to time offering such suggestions as might be calculated to improve the power and utility of the instrument. The kepalepsalis is so constructed that it may be applied with perfect safety to the maternal structures in any pelvis with a space of only one inch and an eighth between the promontory of the sacrum and the symphysis pubis: it cuts out the piece of bone within its grasp with such facility, as to require but a very moderate degree of power from the operator; it is capable of removing large portions of the skull in each successive application, whereby our object is attained with comparative expedition; and, finally, while one or more portions of bone, after being separated, are still lodged in the instrument, other pieces may be cut away, and the whole simultaneously extracted by the instrument itself; thus superseding in this part of the process the use of the fingers. The only difficulty that can be experienced in the application of this contrivance is one inseparable from every case in which such aid can be required, whether the confinement of the pelvis be extreme or not; viz., placing, during its successive applications, the presenting part of the cranium within its grasp. If a plate of mahogany, or of any other kind of hard wood, the thickness of one of the cranial bones of the fœtus, be covered with thick chamois leather, and placed within the grasp of the kepalepsalis, the great ease with which the included portion is cut through will afford a good idea of the powers of this agent.

The following is a description of the kepalepsalis in Mr. Simpson's own words:—The length of the instrument is thirteen inches and a half; that of the cutting part two inches and a half; and of the handles eleven inches. It is formed on the principle of scissors, but differs from them in so far that, instead of making a division, it affects the separation of the entire portion placed within its grasp. This is effected by continuing the outer blade round the extremity of the inner one, and returning it along the opposite side, as far as the joint or screw, where it forms one solid piece with the handle. When open, the blade resembles a box, two inches in length and half an inch in width, into which the inner blade is accurately fitted, and the cutting action is performed by the edges or corners of this blade passing those of the outer one into the box, as the handles approach each other. It will with equal ease remove a piece about the size and shape of the index-finger, and half an inch wide; or the most narrow portion it may be necessary to detach, as from the peculiar construction of the blades they cannot be thrown from their acting position.

UNIVERSITY COLLEGE HOSPITAL.

LITHOTOMY.

Thomas Thom, aged 45, was admitted under Mr. Quain. He is a robust farmer's labourer, of decidedly melancholic temperament, but of good general health, except that he is subject to a chronic bronchitis of several years' standing.

History.—For the last fifteen months his urine has been high-coloured, and has deposited a red sediment on cooling. Its evacuation has been attended with pain, and now and then with the discharge of small sandy particles. He states that during last harvest he first noticed the flow of urine to stop suddenly when in full stream, and about the same time small clots of blood first appeared in the urine after riding in a jolting car.

Present Symptoms.—The urine occasionally stops suddenly when in full flow, and escapes again on slightly changing his position. After walking, however short the distance, he has constant desire to make water, attended with an involuntary bearing-down. The jolting of a carriage is very painful, and gives the sensation as of something moving up and down in the perineum. Occasionally severe pain is felt at the extremity of the penis. The urine is of a dark, brownish-red colour, slightly acid. He was ordered a dose of castor-oil, and a mixture containing carbonate of soda and tincture of hyoscyamus. There was some difficulty in detecting the presence of the calculus with a sound. Mr. Hodgson, by whom the case was sent to the hospital, mentioned that he once distinctly heard the instrument "ring" against the stone, but that this was only perceptible in repeated trials afterwards.

In the hospital ineffectual attempts were twice made with the usual expedients of altering the position of the pelvis, elevating the fundus of the bladder by means of the finger introduced into the rectum, &c. It was now directed that previous to the next examination the urine should be retained for a longer period than usual (on the former occasions the quantity of urine in the bladder was moderate), and the stone was struck with little difficulty. It was judged to be of small size. The prostate was found to be enlarged, and the inner surface of the bladder was ascertained, by means of the staff, to be unusually resistant and irregular, owing, doubtless, to the thickened state of the fibres of its muscular coat, and their projection inwards. It may be stated, that in the examination last referred to, and in that afterwards made preparatory to the operation, the patient was aware of the position occupied by the foreign body, for, as the staff approached it, he said, "That's near it—just there"—and it was so. Moreover, the instrument having been turned, so that its beak was removed to the opposite side of the bladder, he added, "Not there, Sir, not there."

In consequence of a slight return of the old chest affection, and subsequently because of a few cases of erysipelas having been brought into the surgical wards, the operation was deferred for a short time. It was performed on the 27th of November.

Operation.—The external incisions were free. The prostate was incised to a very small extent, only as much as resulted from the passage of the scalpel—not a wide one—along the staff; but the gland was further divided by the finger as it was introduced into the bladder. It being found impossible, in consequence of the depth of the fundus of the bladder, to touch the stone with the ordinary straight forceps, a curved one, which was at hand, in anticipation of the difficulty, was had recourse to, and with this the stone (a small flat one) was readily seized and extracted. The operation was immediately followed by a smart hæmorrhage, to the extent of three or four ounces, but it speedily ceased on placing the patient in bed, and applying cold to the wound.

About six hours after the operation the belly was greatly distended with flatus, and he complained of considerable pain in it, which, however, was not increased by pressure; the pulse was quick. Ordered a draught, containing tincture of hyoscyamus and aromatic confection; and to have chamomile flowers, well heated and sprinkled with camphor, applied in a thin bag frequently to the abdomen.

Nov. 28. Passed a good night; the urine escapes freely; the bowels have been greatly relieved by a small dose of rhubarb and calcined magnesia in mint-water.

30. Has had a sleepless night, and is much dejected in mind this morning; the wound has a foul, sloughy appearance; the urine, however, escapes freely, and with it a small quantity of a brown, sanious, semi-fluid substance; the skin has a peculiar sallow hue; pulse 150, small and feeble; tongue dry and brown. An elastic tube was passed into the bladder, and a stream of water was injected, and allowed to regurgitate through the wound until it returned quite clear. This brought away a few small clots of blood, and the first portions which returned were tinged of a brownish hue, and had a somewhat fœtid smell. He now expresses himself to be greatly relieved. A poultice to be applied to the wound. To take immediately a powder, containing two grains of calomel and ten of rhubarb; and a draught, containing ten grains of citrate of potash, three times a-day, together with a teaspoonful of brandy in water, occasionally.

Dec. 1. Tongue moist; pulse 115, improved in quality; bowels open; free escape of urine through the wound.

2. Tongue clean; pulse 95. He was now

ordered a chop and beef-tea, and an anodyne at night. The slough separated to-day from the wound, and a healthy granulating surface was presented.

From this time the recovery of the patient proceeded uninterruptedly, but slowly; it was retarded by a severe attack of bronchitis, to which he has long been subject, and by religious melancholy, under which (according to the report of his sister) he has suffered in a greater or less degree for many years.

20. His general health is very much improved: the urine escapes nearly altogether by the urethra, and the wound is healed, except a very small part at its anterior end. The fistulous opening seeming to be stationary, was afterwards touched with a probe which had been dipped in fused nitrate of silver, and a compress and bandage were placed over the part.

Jan. 18. Sent home to the country cured.

Chemical Composition of the Calculus.—Nucleus, pure uric acid, surrounded by a deposit of uric acid, mixed with urate of ammonia, and traces of lime.

STRANGULATED INGUINAL HERNIA. SUCCESSFUL OPERATION WITHOUT OPENING THE SAC.

F. E., aged 49, a smith, of good health and temperate habits, was admitted at a quarter-past four o'clock, Jan. 20, under the care of Mr. Liston, labouring under strangulated inguinal hernia. Has been the subject of hernia of the left side for ten years. During the first four or five years it was completely reducible, since which time it has been every year less completely reducible. Latterly, it has always caused a tumour of considerable size. Has occasionally suffered from costiveness, to remove which he has been obliged to take pretty active purgatives. At these times the hernial tumour has been of larger size than usual. A few days ago this was the case, but after a time he got the bowels to act, and returned as much as usual of the hernia. The last time his bowels acted was yesterday morning, after the use of strong aperients; since then he has had some uneasiness in the abdomen, for the hernia remained down longer than usual. He took about four ounces of castor-oil and some salts, without producing an evacuation, although his bowels gave him the sensation of their being affected by the medicine. In the afternoon he was induced to apply to a surgeon, who, on examining him, advised him to come immediately to the hospital. On admission he was found to be the subject of a large inguinal hernia. The tumour was large, oblong, and very tense; the lower part of the scrotum appeared to contain a large quantity of fluid; the testicle could not be felt; bowels had not been opened for more than thirty hours. An unsuccessful attempt at reduction by the taxis was made, at first without the hot-bath, and subsequently in it, for about half an hour. There is a little tenderness in the tumour; patient quite free from fever; pulse 98.

Six, p.m. An enema of castor-oil and gruel was administered without effect, and repeated again at nine. A draught of house-medicine was administered, and the following pills were prescribed:—Two drops of croton-oil, a scruple of calomel, a scruple of extract of colocynth; to be divided into eight pills, one to be taken every hour.

Twelve, p.m. He took a few of the pills, but was ordered to leave them off, as he had several times vomited; still without pain.

21. Half-past twelve, p.m. An enema of castor-oil, turpentine, and gruel was administered, by means of an elastic tube passed a considerable distance into the bowel, and ordered to be repeated if it did not act freely.

Half-past six, a.m. Another enema was administered about four o'clock, without effect; no serious symptoms, except the occasional vomiting of bilious matter, have occurred during the night; the tenderness of the tumour is very slight. At seven Mr. Liston was sent for, and arrived at eight: he thought it would be the safest plan to operate without further attempts at reduction, and immediately proceeded to the operation.

On arriving at the spermatic fascia, it was found to form several dense, unyielding bands across the tumour, which was of the oblique kind. The obliquity of the inguinal canal had been completely destroyed by the large size and long continuance of the hernia. There was a very slight constriction of the neck of the sac at the upper border of the internal ring, which was divided, and after a little manipulation the hernia was reduced without opening the sac. The bowels immediately acted freely, and the patient expressed himself as feeling very comfortable, and relieved from the feeling that he had had all along of the bowels being acted upon by the medicines he had taken, without any evacuation being obtained. The wound was then put together by two points of suture, and a compress and bandage applied. In the course of the morning the bowels were freely and frequently opened.

Twelve, a.m. Complains of tenderness in the left iliac region; pulse a little accelerated. Ordered to take one grain of opium and six of calomel immediately.

Four, p.m. The tenderness of the abdomen has increased a little; he is thirsty; pulse 104. He was bled to twenty-four ounces: the bleeding produced a slight degree of faintness.

Six, p.m. Has been easier since the bleeding; pulse 100, less forcible than before the bleeding. He was ordered a scruple of calomel and two grains and a half of opium;

to be divided into ten pills, one of which to be taken every two hours.

22. Four, a.m. During the evening and night he has been going on well; has taken five of the pills; and, as he has no bad symptoms, they are to be discontinued; has slept at intervals; pulse 100.

Ten, a.m. Going on very comfortably in every respect: the bowels have not acted since yesterday morning. Ordered to take half an ounce of castor-oil.

Six, p.m. Has been rather over-purged to-day, in consequence of which he is ordered the following medicine:—Chalk mixture one ounce, tincture of opium ten minims; to be taken directly, and repeated after each liquid motion.

23. The diarrhœa has somewhat abated; the purging has been accompanied with little pain, and he has no tenderness in the abdomen; wound looks healthy, to be dressed with water-dressing; tongue moist, but whitish.

24. Continues the chalk mixture, but is better.

From this time he continued to do well: he had a little diarrhœa, but on the 18th of February was nearly able to leave the hospital.

BETHNAL-GREEN MEDICAL ASSOCIATION.

DETECTION AND DEPARTURE OF AN UNQUALIFIED PRACTITIONER.

To the Editor of THE LANCET.

SIR,—Have the goodness to insert the following proceedings of the Bethnal-Green Medical Association. I have the honour to be, yours, &c.

THOMAS TAYLOR, Hon. Sec.

The principal objects in the formation of this association were, the establishment of a book society, and the determination of points of medical etiquette: to these was added, subsequently the suppression of illegal practitioners. By Rule 18, proposed by Mr. Moore, the society recognises only as members practitioners resident in the parish of Bethnal-green, who are legally-qualified to practise medicine. Originally it consisted of the following gentlemen:—Messrs. Butler, Gavin, Goodwin, Langley, Moore, Pearce, T. Taylor, W. Taylor, and Vandenbergh. At first it was supposed that the whole of the members were duly qualified, but suspicion very shortly afterwards fell on Mr. Moore in the following way. Mr. Moore made a boast that he had passed the examination at Apothecaries' Hall on one evening; sat up all that night, drank a bottle of sherry, and got through the college ordeal on the next. This was thought to be strange, and an inquiry was made as to whether the dates of the diploma of Mr. Edward Moore of *the college*, and Mr. Edward Moore of *the hall*, thus corresponded. The contrary was at once found to be the case. As it was not, therefore, possible that the Mr. Edward Moore, of Bethnal-green, could substantiate his claim to both honours (the date of Edward Moore at *the college* being 1815, and that of Edward Moore at *the hall* being 1826), and there being only one *Edward Moore* on each list, the question naturally arose, Did Mr. Moore, of Bethnal-green, possess *either* diploma? No stir was, however, made in the matter until communications were received from Mr. (now Dr.) Edward Moore, of Plymouth, and Mr. Edward Moore, formerly of Sedgeley, and now of Hales Owen, in answer to letters from Mr. Pearce's assistant, which letters were written wholly without the knowledge of Mr. Pearce. The following are extracts from the letters of those gentlemen:—

Dr. Edward Moore's.—"I am not aware that there is more than one person of my name in the list of the College of Surgeons. If there be only one, then the person in your neighbourhood has no right to claim a power to practise from that source, as I am well known to persons about the college, who can soon identify me; added to which I can refer to my diploma, which is still in my possession. If, by the way, there should be any difficulty, show your friend to Mr. Lawrence, Mr. Travers, Mr. Vincent, Mr. Stanley, or Mr. Skey, and they will soon put the matter right."

Mr. Edward Moore's, of Hales Owen.—"I passed my examination at Apothecaries' Hall on the 23rd of March, 1826, my address being then Sedgeley, Staffordshire. If any person has presumed to practise in my name, the hall should be made acquainted with it, in order to protect their licentiates from such impositions. I never heard of any other Edward Moore than myself living in the parish of Sedgeley, and of the same profession; therefore the person to whom you allude must be acting illegally."

With these facts before him, Mr. Pearce brought the case before the committee (formed by Dr. Gavin, Mr. Moore, Mr. Wm. Taylor, and Mr. Pearce), and in a note to the secretary requested him to summon a meeting, as he had reason to think that one of the members possessed no qualification, and he wished to ascertain the truth. Accordingly a special meeting was held, and the secretary read Mr. Pearce's note to the committee.

Mr. Pearce then said, that the gentleman to whom he alluded was Mr. Moore, and begged to ask Mr. M. whether he really was a member of either the hall or the college, or whether he possessed any Scotch or Irish diploma?

Mr. Moore replied, that he was a member of both.

Mr. Pearce said he would trouble him to point out his name in the hall list.

Mr. Moore at once fixed upon "Edward Moore, of Hales Owen." He was told that he was not that gentleman, who had been written to.

Mr. Moore then claimed Mr. Hales Owen Moore as *his cousin*; said that he had passed on the same evening with him; that the hall had omitted to enter his name for that date with his cousin's; and that he had that very morning called both at the hall and the college (in which latter list, also, his name did not appear), to complain of the injustice of such omissions.

Dr. Gavin asked him to show his diplomas.

Mr. Moore said he could not do that, having lost them both in *a storm*, with other valuable property, off Plymouth; neither could he undertake to produce any testimonial of having had those diplomas in less than six weeks, for, really, the circumstances were very peculiar.

The committee without hesitation gave him that time.

On the morning following the secretary and Mr. Pearce called at the hall and the college, and ascertained that Mr. Moore had *not* been down on the day before, as he had represented.

On the next evening the rest of the committee held another meeting, Mr. Moore again being present, when the secretary informed Mr. Moore that he and Mr. Pearce had been to the hall and college, and had found the statement relative to his calling there to be altogether untrue.

Mr. Moore denied having made any such statement, and denied, also, that Mr. Edward Moore, of Hales Owen, was any relation to him. Moreover, he denied having ever said that he had passed the examinations at the hall and the college, on subsequent evenings.

On the 12th of July last, the six weeks having expired, and Mr. Moore neither appearing nor redeeming his promise, he was unanimously expelled the association.

The members next felt it to be their imperative duty to send a statement of these facts to the hall, with a request that they would give the case of Mr. M. their early attention. The result will be seen by the subjoined letter:—

"Apothecaries' Hall, Jan. 4, 1842.

"Sir,—I am directed by the master and wardens of this society to apprise you, for the information of the Bethnal-green Medical Association, that the inquiries instituted by the society, leaving no room for doubt that Mr. Moore, of Bethnal-green-road, had practised as an apothecary without legal qualification, an action was commenced against him for penalties incurred by such practice. The circumstances of the case, in the opinion of the society, rendered it desirable that the action should, if possible, be brought to trial; but the defendant having declined to plead to the action, no alternative was left to the society but to take a judgment by default, by which a trial was made unnecessary. The society have required payment of five penalties of 20*l.* (together 100*l.*) and costs, and they have retained three penalties of 20*l.* each as a security against Mr. Moore's continued practice, until he is legally qualified. If Mr. Moore should continue to practise as an apothecary without legal qualification, the society will immediately require payment of the remaining penalties. Requesting you will have the goodness to communicate the contents of this letter to the Bethnal-green Medical Association, I have the honour to be, Sir, your most obedient servant,

"Robert B. Upton,
Clerk to the Society.

"T. Taylor, Hon. Sec., &c. &c. &c."

Mr. Moore has since this moved away from the parish, and introduced a Mr. Todd in his stead, Mr. M. being now a "surgeon-dentist, surgeon-oculist, and accoucheur," on Finsbury Pavement.

In conclusion, the association beg to remark, that they gave Mr. Moore every indulgence that was consistent with their duty to themselves and the public, and that he would not have been interfered with could he have shown either an English, a Scotch, or an Irish diploma. They beg also to say, that Mr. Moore has himself only to blame, for had he not exhibited so much bombast, and given utterance to so many romantic and incredible tales (examples of which they cannot refrain from annexing below), in all probability his want of qualification would not have been noticed.

About a year after Mr. Moore had set up his chaise, a cockade appeared on the hat of his groom, and Mr. Moore began to talk loudly, in connection therewith, of his services both in the *army* and the *navy*. Such, however, was not always the version he gave in justification of the badge; for when questioned about it by Dr. Gavin, Mr. Moore exclaimed, "I am a *registrar of marriages*, and consequently, as *an officer under her Majesty's Government*, I have a right to it." Another tale was, that he had once contested the office of assistant-surgeon to the Bristol Infirmary with Mr. Smith, that he had the Duke of Beaufort's interest, and that he lost the election (after it had cost him five hundred pounds, after post-chaises had been flying about for him in every direction, and after polling upwards of three thousand voters,) by three votes only.

The following note negatives completely all these assertions:—

"Bristol Infirmary, Jan. 27, 1841.

"Sir,—I am requested by Mr. Smith to inform you that no such individual as the

one named in your letter, Mr. E. Moore, has ever been known to offer himself for any medical or surgical appointment in this infirmary; also that five hundred votes is the maximum number ever polled by any candidate for any office within these walls. The number of trustees entitled to vote has *never* exceeded twelve hundred. I remain, Sir, your most obedient humble servant,

"CHARLES GREIG, House-surgeon.

"Chas. Welch, Esq."

No man can stand up under what has been elegantly termed "an accumulation of staggerers."

*** Circumstances will not always permit the thorough examination and sifting of pretences which characterised the foregoing inquiry, but there are few or no cases in which the plan of "Mr. Pearce's assistant (of whose courage and determination in commencing the proceedings honourable mention, as it appears to us, should be made) may not be adopted. It has ended with marked success at Bethnal-green. Some account of it will be found in previous numbers of THE LANCET.

LETTER FROM A PATIENT WANTING FURTHER ADVICE.

To the Editor of THE LANCET.

SIR,—Five years of illness, together with my limited means (being solely dependent on an annuity of 20*l.* a-year), induce me to take the liberty of submitting the following particulars of my very singular case to the medical readers of THE LANCET, trusting that if it should meet the eye of any gentleman who has successfully treated a similar case, that he will in *charity* to a poor sufferer render me his assistance, either through the columns of THE LANCET, or by communication with the surgeon under whose care I have already been, or, if preferable, to myself personally.

I have been told that when an infant I was very fat, and often troubled with difficulty of respiration, and other affections of the chest, until about two years old, when I became better; at three years of age I was vaccinated, and continued in tolerable health, though delicate, which was attributed to my growing so fast. At sixteen, I was five feet ten and a quarter inches in height, straight grown, but slight. My station in life was that of a farmer's son, with always plenty of fresh air and exercise, but seldom any laborious work. At twenty years old I went to Jamaica: I was then enjoying excellent health, and moderately stout, weighing about one hundred and eighty-six pounds. This was in May, 1831. Shortly after my arrival in the West Indies, I was much annoyed with boils; but chiefly on my legs, thighs, and buttocks. The following November I had a severe attack of the (country or) bilious fever, which I got over in about a fortnight, and was again annoyed with a crop of boils, I believe at least twenty, as big as walnuts, on my arms, neck, and particularly my shoulders, where I had been blistered. After this I enjoyed excellent health until the early part of 1836, when I got an itching rash, more particularly about my hands and buttocks, and again became subjected to boils. Perhaps I should here state that my occupation was that of a sugar-planter, and neither laborious nor sedentary, but plenty of riding and walking exercise: my principal drink was rum and water, cold (and weak), of which I used to take a moderate quantity, but never to excess; following up the old maxim, "Early to bed and early to rise." About the middle of July, 1836, I felt shooting pricking pains in my left side, though not violent at first; and only occasionally when I laughed, turned round suddenly, &c. Those pains continued, sometimes better sometimes worse, for about a fortnight, when I became much worse by a violent attack while fast asleep in bed; the pain in my side was so severe that I could not remain in bed, but walked the room until the surgeon came and bled me, which afforded me immediate relief. He pronounced my case a severe pleurisy and inflammation of the lungs. The bleeding was repeated, and I was several times blistered on the side and chest, when I began slowly to recover: this was about the latter part of October, 1836. I could not regain my former health and strength, but was sufficiently well to ride round the estate, and attend to its general management, until April, 1837, when the cough again became troublesome to me, attended with cold sweats and rigors, but no expectoration. Being recommended a voyage to England, to which my employers kindly consented, I sailed on the 10th of May. My appetite increased, and I gained strength after being on board. On the night of the 26th, I was awoke by my mouth being filled (from my throat) with pus, but not ill tasted nor mixed with blood. From this time I was obliged to keep my body in a perpendicular posture, otherwise my mouth became filled with matter almost enough to strangle me. I landed on the 24th of June, at which time my cough was distressing beyond description, expectorating three-quarters of a pint of mucus and pus in the twenty-four hours. Cold sweats; and my legs swelled to twice their usual size, and when pressed with the finger would pit like dough. All my friends and several medical men (including an eminent M. D.) pronounced me to be in a confirmed consumption. On my arrival at Exeter I consulted Mr. Tucker, a surgeon of that city. He examined my chest with the stethoscope, and being of opinion the left side was filled with matter suggested an operation, but advised that a consultation with Dr. M'Gowan should be previously held. This took place, and two

other gentlemen being present, all concurred that the only thing to be done was by an opening in the side, to which I consented. A few days afterwards Mr. Tucker performed the operation, by cutting between the sixth and seventh ribs. Full *five pints* of thick and most offensive pus were evacuated (and a piece of lint placed in the wound to prevent it from closing). This gave me *immediate* relief; so much so, indeed, that I was able to lie down in bed directly afterwards, and enjoyed a refreshing sleep. At this time I was in a very weak state, and had been rapidly declining; but after the operation I began to improve in health and gain strength, my cough was relieved as if by magic, and I was in great hopes that my cure was completed; but I was doomed to disappointment, for as the opening in my side closed up, my former symptoms returned. It was suggested to again puncture my chest, which Mr. Tucker did with a small trocar, when *seven* pints more were drawn off at two different periods. In the place of this instrument a piece of elastic catheter was had recourse to, and subsequently a silver canula. This I still wear, as the secretion of matter still goes on; and during the four years and six months since I underwent the operation it has not ceased, and I have drawn off not less than *fifty gallons* of matter. There is a communication from my mouth to the canula through the lungs; for after I have discharged all the matter, I can force out the air sufficiently strong to extinguish a candle if held at the mouth of the canula. Again, if the matter is allowed to accumulate for three or four days, my throat and mouth become filled with it on attempting to lie down, or even to stoop forward. I now weigh about thirty-five or forty poundsless than formerly, when in good health. Some days I can walk four or five miles without feeling much inconvenience. Generally speaking, I feel well when sitting quietly in a chair, but on taking exercise I feel a weakness and shortness of breath: my spirits are as good as ever; and I am not aware of anything wrong with my digestion, for I never feel any inconvenience after eating, although I may have partaken of what many would consider only fit for a ploughman. Indeed, it is all the same whether I eat fish, fowl, flesh, new bread, pastry, cucumber, celery, or, in fact, anything and everything that I eat with a relish seems at home in my stomach; and my stools are pretty regular once a-day. I have now no cold sweats, sleep well at night, and feel refreshed in the morning, and in the summertime my cough is but trifling; but I am kept weak by the discharge of matter. Dr. M'Gowan submitted my case to several eminent medical gentlemen who assembled last year at Plymouth, when Professor Williams of London recommended astringent injections; and I have used many, such as alum and decoction of oak bark. As much as half a pint has been thrown into my chest at one time, but produced no benefit; on the contrary, it aggravated my cough. I must beg pardon for running my narrative to this length, but thought if I was not explicit it would be no good writing at all. Should there be any particulars that I have not stated, I shall be thankful to do so to any medical gentleman who may feel sufficiently interested in my case to write to me. Trusting to the well-known generosity of the medical profession, I remain their most obedient humble servant,

JAMES TUCKETT.

Ashton, near Exeter,
Feb. 21, 1842.

P.S.—This is published with Mr. Tucker's permission, who has kindly promised to attend to any communication on the subject, addressed to him, Southernhay, Exeter. Dr. M'Gowan is not now in England.

*** In publishing this letter we are informed that "its insertion will much oblige many medical gentlemen of Exeter," as well as the unfortunate patient, who has probably never been under a good surgeon *in a hospital.*

DISULPHATE OF QUININE.

To the Editor of THE LANCET.

SIR,—Allow me to offer to your readers the following valuable formula for the disulphate of quina, as a desideratum for our next pharmacopœia (national?):—

℞ *Quinæ disulphatis*, ℈ j;
Acidi citrici crystallorum, gr. x;
Aquæ distillatæ, ℥ j;
Quinæ disulphatem et acidum citricum in aquâ solve, et adde
Vini aurantii optimi, ℥ xix;
Signet "*vinum quinæ disulphatis compositum.*"

I know of no formula in any of the continental pharmacopœias of equal elegance with the above, although most of them contain a wine of the disulphate. In "Talbor's Wonderful Secret," a work printed in London in 1682, it would appear that wine was then considered as the best vehicle for bark. The alkaline nature of the same remedy is there distinctly avowed; as also it was by Mr. Lemery, a celebrated chemist of the same period: vide pages 11 and 25 of the above-named work. It is curious that Talbor, Lemery, and d'Aquin, who was physician to the Grand Monarque, all agreed, even in that early period, in attributing its remedial powers to the presence of some alkali. Your obedient humble servant,

GEO. FRED. COLLIER.

32, Spring Gardens,
March 7, 1842.

In the above formula, on the addition of the wine, the solution is clear and complete and no precipitation follows.

THE LANCET.

London, Saturday, March 12, 1842.

HYDROPATHY is a fine word for water-pain, a "*science*" which certainly rests on a better foundation than homœopathy, or mesmerism, or any of the other mystic "sciences" which have latterly issued from that hot-bed of absurdities, Austria, where the crushed minds of men that cannot bear the healthful fruits of free investigation, run riot in the extravagancies of fantastic credulity, or ignorantly strive to breathe life into the dead superstitions, and *one-ideal* theories, of the middle ages. We are never in a hurry to notice these novelties; as the climate of England is not very congenial to them, and they seldom make much impression here, or obtain any permanent footing, excepting in our lunatic asylums, and in small coteries of the wrong or weak-headed. But it does sometimes happen that they attract momentary attention, and lead away people who ought to know better, until THE LANCET brings their merits to light; when, by some singular fatality, they fade away, and die in the fond arms of the natural fathers, who nursed, named, and introduced them to the English public. Witness —*Animal Magnetism*.

And here let us not be misunderstood at the outset. In maintaining that homœopathy, with its millionth-grain doses, was a gross imposition when reduced to a system, we did not deny that small doses of some remedies were useful. Though CAVANAGH was a cheat, it does not follow that a man may not live some days without food, and some weeks with little food. All the attempts of the mesmerists to prove that the cataleptic and other real or counterfeit states of their patients, are the effects of any new force, or of anything but the will of the individuals, have been unequivocal failures: so have the pretended exhibitions of *clairvoyance*, by the *sharp-sighted* young ladies and magnetic gentlemen, from OKEY upwards and downwards, seeing as far through stone walls and cotton bandages as other people, and no farther—in the presence of good observers. But physiologists in rejecting mesmerism never doubted for a moment that one human being exercised a strong influence over another. Influence being the basis of all the social relations, and the source of inexhaustible pleasures, as well as of much misery to mankind: no one ever doubted the power of fancy in hysterical girls. So, if we condemn the humbug of hydropathy, it must not be imagined for a moment that we deny the virtues of cold water as a remedy when administered with discrimination; it is used in medicine externally as a lotion, or a bath, and is administered internally with beneficial effects in certain cases. Dr. CURRIE's book is still a medical classic. MACARTNEY has shown the real use of water. The watering-places owe a large part of their medical fame to the efficacy of water. The peculiarity and absurdity of the water-doctors lie in this, that they carry the administration of water, in all forms, to excess, and apply it indiscriminately in all cases. In this fact consists the originality and the mischievous tendency of VINCENT PRIESSNITZ's practice.

We suppose that we must say something about this man, and Mr. R. T. CLARIDGE, under whose name a compilation of German rhodomontade, interspersed with English quackery, has been published. The German water-doctor, whose proceedings he reports, lives at Graefenberg, half way up one of the mountains of the Sudates in Silesia; his father was the proprietor of the small farm on which the establishment is built, and gave his son little or no education. An old man in the neighbourhood who practised the "water-pain" upon animals, and occasionally upon the peasantry, was patronised by the father, and imparted to VINCENT PRIESSNITZ, the son, his first notions of the "science," for he appears to have been too illiterate to acquire the information from a book on the subject, by Dr. HAHN, who resided at Schweidnitz, thirty miles from Graefenberg. Mr. CLARIDGE *says* that PRIESSNITZ is forty-

two years of age; that his patients increased from 45 annually in 1829 to 1576 in 1840; and that in 1841 he had "under his "treatment one *archduchess*, ten *princes* and "*princesses*, at least a hundred *counts* and "*barons*, *military men* of all grades, several "*medical men*, *professors*, &c., in all about "five hundred, and that he has accumulated "wealth to the amount of £50,000?" Mr. CLARIDGE's statistics look very well on paper; what degree of confidence should be attached to them and his other statements will shortly appear.

The origin of the fame of PRIESSNITZ is thus described by his English advertiser:—Whilst engaged in hay-making, he had two ribs broken. A surgeon from Freiwaldau declared that he never could be cured. Not being pleased with the prognostication, he determined to endeavour to cure himself. To replace his ribs, he leant with his abdomen against a table, *or* a chair, and held his breath to expand the chest. "The ribs "being thus replaced, he applied wet cloths "to the parts affected, drank plentifully of "water, ate sparingly, and remained in per-"fect repose. In *ten days he was able to go* "*out, and at the end of a year he was again* "*at his occupations in the field!*"

Broken ribs in a case like this, as every one in and out of the profession knows, are cured by English surgeons perfectly in a month or six weeks, and the patient can walk about as soon as the proper bandage is applied. Mr. CLARIDGE adds characteristically:—"The *fame of this* EXTRAORDINARY "CURE soon spread abroad among his neigh-"bours!!" After treating their diseases, and occasionally those of cattle, he ventured on more serious cases. His house was beset by rich and poor. Having no remedy but spring water, no theories to puzzle his brain, and no guide but *nature*, *he soon perceived* the defect of the *present system of diet, and the mode of treating disease*. The result was the discovery of hydropathy. The cure of *all acute diseases* is to PRIESSNITZ mere child's play, and in no instance of nervous fevers or inflammations in any stage was he ever known to lose a patient; a radical cure is effected in a few days, without the subsequent debility which would result from any other treatment. Gout, rheumatism, scrofula, syphilis, are all washed away by the waters of Graefenberg. The Austrian Government sent a commission of inquiry to Graefenberg, and did not subsequently interfere with the proceedings,—for it never does with anything that is stupid and stupifying.

The basis of the treatment is water-drinking: all persons are expected to drink *plentifully of water*—none less than ten or twelve glasses daily, while many have to swallow thirty glasses daily. Some persons, on first drinking water, feel sick, vomit, or have diarrhœa: "these symptoms *only prove* that "the stomach contains the remains of dis-"eases which the water has disturbed. In-"stead of discontinuing it, it is requisite to "drink *more water*." The patients have to administer injections of water themselves; a second is thrown up as soon as the first returns. The water is thus often absorbed. Water is injected into their eyes, ears, and nostrils. The patients *sit* in water, have half-baths and *douches;* are pumped on, and plunge into water. The wet sheet is the masterpiece of his treatment. In acute diseases, such as fevers and inflammations, the patients are rolled up in blankets and cold wet sheets, which are frequently renewed.

The diet is, *ad libitum*, plentiful and coarse. The chief establishment belonging to this quack is badly arranged, there being always a disagreeable smell arising from the *cows on the ground-floor*, the "*public conveniences*" on the staircases, and the kitchen, which is under the saloon. The houses belonging to PRIESSNITZ will hold about two hundred persons. The bed rooms are small, and as bare as barracks; but "he considers the "want of comfort in the apartments an "*advantage*."

Mr. CLARIDGE's book professes to be partly a compilation, partly a translation, and partly original. The learned member of the Arcadian Academy at Rome, is in every respect worthy of his subject. Of R. T.

Claridge, Esq., and Priessnitz it may in one sense, at least, be said,—"*Arcades ambo.*" Their ignorance is equal; their boldness infinite. The Arcadian translator, for instance, is ludicrously ignorant of German; he does not know the first elements of orthography; he cannot spell *Graefenberg* correctly; at which he says that he resided three months. Our readers are aware that the Germans either write the *e* in such words as *Goethe*, or express it by two dots over the first vowel; thus, Göthe. Thus we may write Gräfenberg, or Graefenberg; the learned *Arcadian* prints it throughout his work Gräefenberg. He indulges in antiquarian research, and having been in Italy, gravely tells his readers that the Abbé Sanctorious, a Florentine, proved that "six or seven pounds" ought to pass from the body daily. He goes on to say that "this "accounts for persons of a sedentary habit "being less healthy than those who take ex- "ercise. Many professions are, indeed, so "injurious in their effects, that Carnizini, a "physician of Padua, wrote a book, '*De "Moribus Artificium*' (the Arcadian version "of Ramazzini, *De Morbis Artificum*), illus- "trating the peculiar diseases of tradesmen." But we must give a specimen of the acumen with which Mr. Claridge solves scientific problems:—

"As few persons take more than one "pound and a half of food, and two pounds "of liquid into their stomachs in a day, *the "question now arises, whence this great resi- "due* (three or four pounds) *originated;* the "answer is, that men, like all organic objects, "*feed upon air.*"

The chemists are told that the "impulse "of assimilation is prevalent in elemental "bodies; that is to say, in *water, earth, and "fire.*" The geologists are informed, that "the globe in the beginning was a rigid "rock, upon which the air and the water "*effected their power of assimilation.*"

Mr. Claridge professes to give the literary and medical history of the cold-water cure; and it is in his literary and historical character that we have the heaviest charges to bring against him. He expresses himself "utterly at a loss to account for the silence "of the literary and medical world on this "*highly important* subject;" while it is a fact, that Dr. James Johnson has given a fuller, and we need not say better, account of Graefenberg and Priessnitz than the author. Then Mr. Claridge introduces the cold-water treatment to the world, unblushingly, as something new. His preface, which would be quite unique in its way, if Mr. George Robins had never lived and written, opens in this strain:—

"It is easy to conceive that anything so novel and so extraordinary as hydropathy, on being first made known to the British public, will create no little surprise. But how much will this be increased by the knowledge of the fact, that at Gräefenberg, within two days' journey from Dresden, and only eight or ten days' from London, there exists *one of the greatest benefactors of mankind*, one of the most *astounding geniuses* of this or any other age—the founder of a system—by which he proves, beyond the power of contradiction, that all curable diseases, and many declared by the faculty beyond the power of their art, are to be cured by the sole agency of cold spring-water, air, and exercise (the first applied in manifold ways); that the aid of this *second Hippocrates* has been sought from 1829 to the present time, by upwards of seven thousand invalids, the greater part of whom were of the better orders of society; that between forty and fifty hydropathic establishments have sprung up in different parts of Germany, Hungary, Poland, and Russia, chiefly presided over by medical men, and that books have been published on the subject in almost every continental language, and comments made in the greater part of the German papers: yet this most *interesting and highly valuable discovery*, one calculated to ameliorate, both physically and morally, the condition of mankind, *more, perhaps, than any other made since the dawn of Christianity, is altogether unknown in England.*"

It would be excusable to write thus of Priessnitz as a discoverer and an original genius, if Mr. Claridge had no pretensions to literature and to research. But Mr. Claridge is an Arcadian. He quotes Pindar, Pythagoras, Hippocrates, Celsus, Galen, Charlemagne, and John Wesley, on the virtues of water, without saying one word of Le Sage, or making a single reference to the celebrated Dr. Sangrado, of Valladolid,

from whom Mr. CLARIDGE has taken entire passages, and all the scientific parts of his book. Was this candid, or just, or becoming?

The exhortation of SANGRADO to GIL BLAS and the servant, is the basis of PRIESSNITZ's water practice and principles. We add a few passages of this unknown book for comparison. "Drink my children; health consists in the suppleness and humectation of the organs. Drink water copiously; it is an universal dissolvent; water dissolves all the salts. If the circulation of the blood be slackened, it accelerates it; if it be too rapid, it retards its impetuosity."—*Sangrado.* This passage is repeated as original by CLARIDGE two or three times. When the German SANGRADO's patients get worse under the use of water, he bids them drink more. This is from SANGRADO again. "Truly, GIL BLAS, I am not astonished that thy health is bad; thou does not drink enough, my friend. Water in small quantities only serves to develop the constituents of bile, and to increase their activity; now they must be drowned in a copious diluent." Compare this with the preceding statements. They are identical.

Like Mr. CLARIDGE, GIL BLAS, with his mantle on, got into an awkward discussion by prescribing water in dropsy. He was defended thus by SANGRADO: "Yes, water will cure all sorts of *dropsies*, and it is good for rheumatism; it is admirable in both burning and shivering fevers, and wonderful in the diseases ascribed to cold, serous, phlegmatic, and pituitous humours." What says CLARIDGE? "Dropsy, in its *infancy*, may *always be speedily cured* by hydropathy, and in its most advanced stages, if there be any strength left in the constitution; this disease will be eradicated by the water cure."

Whole pages of the book are dilutions of SANGRADO's discourses and panegyrics on water, addressed with so much effect to his distinguished pupil GIL BLAS, who had the satisfaction of knowing *la medicine a fond*, when he had mastered two points—the prescription of bleeding, and water in all cases.

It was a bold and strange enterprise to attempt to revive these doctrines, and to palm gross plagiarisms from GIL BLAS on the literary world as original. It is stranger still that a person so stupid and ignorant as the writer of this book, should have succeeded for a moment in any quarter. It will not be our fault if he induce one English family to travel ten days in order to drink cold water, to be wrapt in wet sheets, to lodge over the cowhouses, or "private conveniences," of the wretched caricature of a SANGRADO, and to find graves in Graefenberg. Mr. CLARIDGE will probably find that he has made a mistake in turning his talents to physic, and crying "water" about the streets; he had better have continued crying "there is nothing like *leather*," or "there is nothing like *asphalt*," or there is nothing like "wood." We do not feel called upon to notice his asphaltic squireship's aspersions on the character of the medical profession.

BRITISH MEDICAL ASSOCIATION.

Exeter Hall, March 1, 1842.

Dr. WEBSTER in the chair.

THE breviate of the Bill of the association having been read and discussed, the Council debated on the propriety of calling a general meeting of the profession to consider its present anomalous state, &c.

Allusion having been made to the late treatment of the surgeon to the Sevenoaks Union, by the Poor-law guardians of that district, it was, on the motion of Mr. CRISP, seconded by Mr. RICHARD WALLACE, unanimously resolved,—

"That the Council of the British Medical Association having attentively considered the charges alleged as well as insinuated against Mr. Adams, with regard to the performance of his professional duties to the poor of the union of Sevenoaks; and having also read his bold, manly, and unrefuted vindication, are of opinion that his exertions to befriend the poor were animated by the spirit of the purest and most disinterested benevolence; that his skill and ability were honourably acknowledged by the most disinterested witnesses; that his demeanour throughout an inquisitorial and partially-conducted investigation was alike prudent and spirited, and such as should have characterised a member of a useful and enlightened profession; and the Council hope

that his proceedings will serve as an example and incentive to their brethren throughout the country, in asserting their dignity and independence when undeservedly assailed; that his refusal to allow himself to be resubjected to similar indignity, and his general conduct in sustaining the character, honour, and humanity of his profession, entitle him to the thanks, gratitude, and highest consideration of this Council and the profession at large."

The meeting then adjourned.

March 8, 1842.

Special Meeting of Council.

Dr. IFILL in the chair.

Communications were received from Mr. T. C. Carter, of Newcastle; Mr. Nankivell, of St. Columb; and Mr. Grainger, on medical politics. The utility of convening a public meeting of the profession, suggested on Tuesday last, having been duly considered, it was agreed that a proper time should be fixed upon on another occasion for announcing the assembly at a suitable place in the metropolis. The meeting then adjourned.

UNIVERSITY COLLEGE MEDICAL SOCIETY.

Friday, Feb. 25, 1842.

Mr. MARSHALL in the chair.

THE SALIVA.

A PAPER was read by Mr. A. B. Garrod on the saliva, the result of experiments performed by Mr. Marshall and himself, in the case of a man labouring under fistula of the right parotid duct, in University College Hospital; admitted for operation under Mr. Liston. The experiments were performed between the 6th and 14th of January. After speaking of the various and conflicting opinions with regard to the reactions, chemical composition, &c., of the saliva, he proceeded to give the results of their own experiments.

Reactions.—Tiedemann and Gmelin found it generally slightly alkaline, sometimes neutral, but never acid. Schultz found it acid in the adult when retained in the mouth—alkaline in children. Mitscherlich, who observed it in a case of parotid fistula, found it acid when not eating, alkaline during a meal. Other observers have come to similar conclusions; but most consider that it is capable of varying under very slight circumstances. Messrs. Marshall and Garrod found that between meals the fluid issuing from the fistulous opening, amounting to two or three drops in the quarter of an hour, was always acid, but within half a minute after a morsel had been taken it became neutral, and within the minute alkaline: it soon became strongly alkaline, and remained so till the completion of the meal. About ten minutes after the meal it again became neutral, and acid in about twenty minutes, and remained so till the next meal. The only exceptions were during cough, which, when slight, produced an increased flow of saliva; and it often became neutral for a minute, but soon returned to its acid state. When, however, the cough was long-continued, the fluid not only became neutral but even alkaline; but it soon returned to its acid state when the fit of coughing was over.

When the fluid issuing from the fistula was acid, then also blue test-paper became reddened when applied above and below the tongue, and also to the opening of the other parotid duct; and when the fluid was alkaline at the fistula, so were the surfaces abovementioned.

These experiments were repeated many times in the presence of Dr. Sharpey, Mr. Liston, and many other gentlemen, and always with the same results. Once only was the fluid from fistula (during rest) found to be alkaline, and then it was found to be owing to a drop of pus, which, being removed, the acid indication was given.

Reasoning on these facts, and not thinking it probable that a secretion could change from acid to alkaline in so short a time, the more from its not being *excited* by mental emotions only (as the sight of food, &c.), but also by coughing, or motion of the masticating organs, Mr. Garrod endeavoured to explain it otherwise; viz., by supposing that the *acidity* was owing to the mucous secretion of the duct, &c., and that the true saliva was always alkaline. Then, when the saliva is flowing but very slowly, as between meals, &c., the alkalinity of the saliva would not be able to neutralise the acid mucus constantly secreted, and the indication, therefore, would be acid; but when the saliva was excited to an increased flow, this first neutralised, then more than neutralised, the acidity of the mucus, and the indications would be first neutral, then alkaline; and, of course, when the flow of saliva was diminished again, it would pass through the same changes. But it was found that the fluid became alkaline in about a minute, but did not recover its acid state for twenty minutes after the meals. This is also explained by the above theory; for when the saliva is excited, the quantity is so great compared with the mucus, that it soon overpowers it, and for the same reason it would be long in recovering its acidity after the meal was completed.

But is mucus or are all mucous surfaces acid? for to establish this theory it was required to prove this. A four-month fœtus was examined by Mr. Marshall, and it was found that a strong acid indication was given by the mucous membranes of the mouth, nose, anus, and vagina: these, of course, were uninfluenced by the special secretions which vitiate the experiments in the living

subject, and which frequently are alkaline, as the tears, &c. The lining membrane of the parotid duct in the sheep was examined, and was found likewise to be acid.

Smoking a pipe in this case did not increase the flow of saliva—only three or four drops of fluid issued from the ducts during the experiment, which was strongly acid. The state of the mouth was examined, yet notwithstanding the alkaline state of the smoke, was found to be intensely acid, and the quantity of the mucus was increased. These experiments seem clearly to prove the acidity of mucus.

Chemical Composition.—The alkaline state was not owing to free ammonia, as Schultz asserted; for the fluid, when kept at a high temperature, did not lose its alkaline state: the distilled fluid was not alkaline, and the papers made blue did not recover their redness when exposed to heat. Potassa was not found in the fluid, so it depended probably on free soda.

Sulphocyanogen.—This has been asserted to exist in the saliva by some, but denied by others.

The tests used in the experiments of Messrs. Garrod and Marshall were the action of the per-salts of iron, or the production of sulphuretted hydrogen from the fluid. A sulphocyanide colours the per-salts of iron blood-red; but the acetates, formiates, and meconic acid do the same. But it is found, that when a crystal of corrosive sublimate is added to the fluid, coloured by the sulphocyanide, that the colour vanishes. This does not happen with the fluid reddened by the other substances. Heat also destroys the colour of the sulphocyanide for the time; not so with the others.

A piece of pure zinc and sulphuric acid were put into a test-tube; the hydrogen evolved gave no trace of sulphur to lead-papers for half an hour, but when a few drops of healthy saliva were added, the lead-paper became blackened immediately, and the sulphuretted hydrogen was also sensible to the nose.

Great care is required in this experiment to procure the zinc very pure, as sulphur is generally contained in it, and will vitiate the experiment. But this might be owing to the albumen, which contains sulphur as an essential ingredient, or to a soluble sulphuret. To obviate this an alcoholic solution of saliva was made, which could not contain albumen, which also gave the indications of sulphur. It was not owing to a soluble sulphuret, for the alcoholic solution did not blacken lead-paper. Now the sulphuret of lead is black, but the sulphocyanide is of a light yellow colour.

If further proof were wanting of the presence of sulphocyanogen in the saliva, it was found that when the solution ceased to evolve sulphuretted hydrogen, then also it ceased to give the red colour with the per-salts of iron. As no potassa or ammonia was found in the saliva, the sulphocyanogen probably exists in it, as a sulphocyanide of soda. Mr. Garrod then alluded to the experiments of Dr. Davidson, on the absence of sulphocyanogen from the saliva in certain diseases, as ptyalism, fevers, &c., and remarked, that during the time the man was under the influence of mercury the sulphocyanogen was *almost* entirely absent, becoming apparent only by concentration (but the ptyalism in this case was slight), and it seemed to return as the ptyalism abated; but the operation for the fistula prevented their continuing the experiments. The man was labouring under phthisis also, and perhaps this might reduce the quantity of sulphocyanogen in the saliva.

The quantity of solid matter found in the saliva was 1.7 in 100, it is usually stated to be about 1. in 100; but this increase might be owing to albumen, which was distinctly indicated by means of heat and nitric acid. Albumen is not usually considered one of the constituents of healthy saliva. The quantity of saliva from the fistula was found to be from two to four drachms during a meal, but the man's appetite was not very good. The saliva was found to change a solution of starch, so that it no longer gave the blue colour with iodine. The alcoholic extract of the changed starch was found to have a slightly saccharine taste; so probably a part of the starch was converted into sugar, the rest being only converted into destrinee.

Microscopic Characters.—Under the microscope the saliva was found to consist of a clear fluid, containing epithelium scales, small granules, and also true salivary globules, about $\frac{1}{1500}$ inch in diameter. A nucleus was distinctly visible in each when a drop of sulphurous acid was added. This nucleus seems to be situated rather to one side of the globule.

Mr. NORMAN related the "history of the case of salivary fistula," which had given the opportunity for making these experiments. The man in whom it had occurred, a smith by trade, was admitted into the University College Hospital, on the 6th of January last, labouring under extensive disease of the lungs, as well as the fistula. About six months before, he had received a severe blow in the cheek, which was followed by the formation of an abscess. This was opened at this hospital, and a large quantity of pus evacuated. About a fortnight before his admission into the hospital he perceived a discharge of "clear fluid" to take place from the wound in his cheek, which had been made to evacuate the contents of the abscess. The quantity of this fluid increased greatly during meals. On admission, the saliva was observed to escape guttatim from a small fistulous aperture in the cheek, and to increase in quantity during mastication. There was no communication

between this fistula and the interior of the mouth. On the 14th of January, Mr. Liston proceeded to operate for the cure of the fistula in the following manner:—A piece of waxed thread was attached at each end to a needle; one of the needles was then passed through the fistula into the mouth, immediately at the termination of the duct; the other about the eighth of an inch anterior to it; both threads were then drawn through, and included in the loop which they thus formed a portion of the inner part of the cheek; the thread was tied down upon this, and thus an aperture was made into the mouth. The edges of the fistula were then cauterised, in order to procure cicatrisation and contraction of the aperture. The cauterisation has been unsuccessful in procuring this object, though repeated once since; but an efficient course has been found for the saliva into the mouth, and the dribbling over the cheek completely prevented.

Dr. QUAIN thought it desirable to know whether the fistula was near the termination of the duct or not? if it were, the explanation given by Messrs. Garrod and Marshall of the acidity of the first few drops examined was the more likely to be true.

Mr. NORMAN: Just at the extremity of the duct.

Dr. QUAIN thought there was a great similarity in the changes which appeared to take place in the saliva from acid to alkaline, and those observed by Müller in the pancreatic fluid: probably the same explanation applied to both. The increase of mucus secreted during smoking might also lead to the question, whether in mercurial ptyalism the saliva were really increased in quantity, or the secretion of the muciparous glands.

Dr. HARE thought the question of Messrs. Marshall and Garrod's claim to the priority of these experiments and discoveries ought to be decided upon. Just at the time of their experiments an anonymous writer had announced them in the "Medical Gazette;" and on being requested to give up his name by Messrs. Garrod and Marshall, and to state if such were *bonâ fide* experiments of his own, he refused to do so, and the editors of the "Gazette" very properly refused to publish any more of his communications. He (Dr. Hare) believed, from the openness with which Messrs. Garrod and Marshall had conducted their experiments, and communicated them to other gentlemen connected with the college, that some one of these gentlemen, influenced by most improper feelings, had published these experiments as his own.

Mr. MARSHALL stated, that coincidence of time and peculiarities of expression gave him reason to suppose the writer of this article in the "Gazette" had been making use of their experiments, and in consequence had requested him to give up his name, but this had not been done. As to changes in the saliva and pancreatic secretion, Tiedemann and Gmelin had found of the pancreatic secretion the first few drops acid, but the greater portion alkaline. Mitscherlich had found the mucous secretion from the mouth in smoking to be acid, and not to contain sulphocyanogen. The observations of Tiedemann and Gmelin on the pancreatic secretion were not to be relied on, as they were all made in the intervals between meals. The salivary globules might be stated at about one-third of the diameter of blood-globules. The nuclei of the globules were not central.

WESTMINSTER MEDICAL SOCIETY.

Saturday, March 5, 1842.

Mr. H. J. JOHNSON, President.

MR. BROOKE having been called on by the President for his communication on the application

OF SUTURES AND LIGATURES,

commenced by observing, that the subject might perhaps be considered hardly worthy the serious attention of the society; but that any improvement in the minor operations of surgery acquired some importance from the comparative frequency of their occurrence. The suture which he proposed to describe might, for the sake of distinction, be called the "bead suture." A piece of silk, with a knot at one end of it, was doubled, and the loop passed through a small flat glass bead; a needle attached to a handle, resembling in form a packing needle, with a notch near the point, was passed through the portions of integument to be united; the loop of the silk was placed in the notch, and the needle withdrawn, bringing the loop with it, which was then passed through a similar bead; the loop divided, and a knot tied on that portion of the thread which had not a knot at the other end. By drawing the free ends of the threads the beads are brought to rest on the surface of the integument, and the edges to be united are placed most accurately in apposition. It is difficult to comprehend exactly the method of applying this suture by mere description, although it was rendered perfectly intelligible by the demonstration given by Mr. Brooke. The advantage of this over the common interrupted, or the pin-suture, was stated to be, that no pressure whatever was exerted on the portion of surface intervening between the exit of the threads; and, consequently, that there was much less liability of the suture to cut out before adhesion was accomplished: and, although possessing this advantage in common with the quill-suture, it was superior to the latter in the facility and accuracy with which the separated parts were brought together, in consequence of each suture being separately adjusted. Mr. Brooke mentioned

a case of hare-lip on which he had operated, where the maxillary and palate-bones were separated by a fissure; and in this case the uppermost suture was just within the aperture of the nares, a situation in which no other than the common interrupted suture could have been applied, and this would probably have failed in holding together parts previously so widely separated. Mr. Brooke then remarked, that he considered the principle of passing an unarmed needle, and drawing the ligature back, instead of carrying it forward with the needle, might be applied with great advantage in operations for tying arteries. He exhibited a needle intended to be used in this manner, with a notch near the point, and a grooved director, by means of which the ligature might be readily placed in the notch of the needle, although the latter might be out of sight or obscured by hæmorrhage. These instruments were made by Mr. Ferguson. It was, however, observed, that many would experience no difficulty in placing the ligature in the notch of the needle by the finger alone, without the aid of any accessory instrument. The advantage of this mode of operating was stated to be, that the artery is much less disturbed from its connections, and the needle much more readily passed under the vessel, when not impeded by the ligature.

The President considered that the bead-suture would be a valuable addition to the means we possessed, but not so the aneurism-needle. Nearly all the arteries that required to be tied were superficial, and did not require such an instrument; and he thought it not applicable to the few that were deep-seated, as the subclavian and the anterior and posterior tibial. An instrument with an arbitrary curve, like that of Mr. Brooke, would be ill-suited to arteries of different sizes and in different situations, and would, he thought, more endanger the piercing of the coats of the artery than one the direction of whose point could be altered at will. He believed a flexible needle, made of alloyed silver, in the form of the common aneurism-needle, would be found most useful.

Dr. Bucknill said, that when a pupil of Mr. Liston's, he had a difficulty in getting ligatures thick enough for that surgeon, until he met with a cord called hatter's-silk, with which hat-linings are drawn up; this never cut out, although any smaller ligature was apt to do so. A needle, of a large curve, or almost straight, was best adapted for sutures. The requisite close adhesion of the soft palate would not be so well maintained by the suture with beads as by the common suture. There was no resistance behind, and therefore the loose membrane would be pressed forward, and form a ridge.

Mr. Brooke replied, that it would be necessary to have the aneurism-needle of two or three different sizes, to suit different arteries. He thought the proposition to have aneurism-needles made of flexible material a valuable one. It was not, however, the form of the needle on which he mainly insisted, but he thought the chief value of the method he proposed consisted in the passage of an unarmed needle, and the drawing back of the ligature. In applying the suture to the soft palate he should not pass the ligature quite through the mucous membrane, otherwise it might be open to the objection of Dr. Bucknill. He had applied the bead-suture to the soft palate of the dead subject, and found it to answer very well: the edges did not pout forward, and form a ridge.

ROYAL SOCIETY. ELECTION OF THE KING OF PRUSSIA.

February 1, 1842.

At a special meeting of the Royal Society, held at nine o'clock, a.m.,

Sir John William Lubbock, Bart., V.P. and Treasurer, in the chair.

His Majesty the King of Prussia came to the society, accompanied by Baron Alexander von Humboldt; whereupon the Vice-president in the chair addressed him in the following words:—

"May it please your Majesty:

"It is my duty to express to your Majesty the great regret which we feel, and which we are confident that the Marquis of Northampton, the president of this society, will participate in, that, being in a distant country, he is unable to be present upon this auspicious occasion, so interesting to the members, and which will long be gratefully remembered in the history of the society.

"In his absence, therefore, I must endeavour, however imperfectly, to express to your Majesty the great gratification with which the society will see the august name of your Majesty, who is venerated as the encourager of art, of literature, and of science, enrolled in our charter-book, in the same page with those of our most gracious and beloved Sovereign and her illustrious Consort; and we beg leave, accordingly, to present the charter-book to your Majesty for that purpose."

His Majesty then signed his name in the charter-book, and was duly admitted a fellow of the society.

His Majesty expressed his gratification at having his name enrolled among the fellows of the Royal Society.

Baron Alexander von Humboldt, formerly elected a foreign member, also signed his name in the charter-book, and was duly admitted a fellow.

DR. COOKSON AND MR. HILL.

To the Editor of THE LANCET.

SIR,—Your correspondent, Mr. R. G. Hill, has an undoubted right to submit, through the medium of your pages, to the medical public as many of my official reports as he may happen to think proper; but I maintain that he has no right to sit down and invent nonsense, and then deliberately publish it to the world as the product of my pen.

Mr. R. G. H.'s version of my report, dated Aug. 25, 1840, must infallibly induce your readers to impute to me the perpetration of the following outrage on common sense, and on the intelligibility of our vernacular language:—

"If seclusion *must be* the apparatus, it ought to be as perfect as possible."

Now my words are these—"If seclusion *must be*, the apparatus *for* it ought to be as perfect as possible." I do not mean to say that this sentence is very elegantly expressed, but it is at least intelligible; at all events, I prefer my own words to those of Mr. R. G. Hill, and I beg to be allowed to set the matter right. As to any controversy with Mr. R. G. Hill, I decline it altogether. My creed respecting restraint and non-restraint is expressed in that part of my report which Mr. R. G. H. has obligingly left intact. In that creed I shall rest satisfied until the facts contained in the small brochure, which I take the liberty of inclosing for your perusal, shall be as publicly proved to be fallacies, as they have been asserted to be truths. Since those facts were given to the public, others of a similar nature have transpired; and the disclosures made by patients after they have left our galleries, and more especially those of a gentleman who left us only last week (disclosures which *ought* to form a part of our coming annual report) have not tended to increase my faith in that extreme which some call the *non*-restraint, but which you yourself have more truly, more candidly, and more aptly termed the *keeper*-restraint system. I have the honour to be, Sir, yours,

W. D. COOKSON.

Lincoln, March 1, 1842.

IMPEACHED REVIEW.

To the Editor of THE LANCET.

SIR,—A most malignant and miserable review of Drs. Bellingham and Mitchell's "Materia Medica," was *surreptitiously foisted* into the "Dublin Medical Journal" for this month. The editor of that journal is most desirous, by every means in his power, to neutralise its malicious and mischievous tendency, and regrets exceedingly that his journal should have been made a tool of for such a purpose. We take the liberty of apprising you of the above circumstance, as a copy of the work was sent to you for review, and we have been given to understand that attempts will be made to introduce a similar article into some other of the medical journals. We have the honour to be, Sir, your obedient servants,

FANNIN AND CO.

ROYAL COLLEGE OF SURGEONS IN LONDON.

LIST of gentlemen admitted members on Friday, March 4, 1842:—Charles Ingram; John Carter Barrett; William Godfrey Watt; Benjamin Frederick Frankis; James M'Namara; William Carson; Thomas William Ransom; Henry Day; John Balfour Buchanan; John Deighton; Frederick Hughes Kelson; Douglass Nicholas Tucker; Charles Otter Gilby.

BOOKS RECEIVED.

The Pocket Formulary, and Synopsis of the British and Foreign Pharmacopœias; comprising Standard and Approved Formulæ for more than One Thousand Officinal and Extemporaneous Compounds employed in Medical Practice. Arranged in Alphabetical Order. By Henry Beasley. Second Edition. London: Sherwood and Co., 1842. 16mo. Pp. 284.

The Dublin Journal of Medical Science; including the latest Discoveries in Medicine, Surgery, and the Collateral Sciences. No. 61, March, 1842.

TO CORRESPONDENTS.

W. R.—It is not usual to insert essays of such a description as that sent, unsupported by new and well-attested facts, and contributed anonymously.

A Constant Reader (New-road).—A cockade warfare would make a trumpery fight. There is no statute law against the indulgence of the fancy. Mr. Moore pronounced it to be "military;" a quality that is anybody's, and very common in absence of a better. Mr. Tappertit was a "noble captain."

Socelius.—The loss of a pint of blood by a person in health must vary with the strength of his system: one man will bear it without a trace of change, while another will fall into a faintness that may with difficulty be recovered from. Most men would become pale. After this loss, all conditions remaining the same, nature would set herself actively to work to restore the vessels to their previous fulness. The expression "a spare diet" is too indefinite to reason upon; some pints of tea, with some of broth and some pounds of bread, may be considered a spare diet, but this is not the diet to restore or maintain health; an egg for breakfast, a mutton-chop for dinner at an early hour, with a moderate evening repast and but little fluid,

is also a spare diet, and more consistent with the health of an omnivorous hard-working animal like man. Fluid in excess over-dilutes the blood, in moderation it is most useful; but it should not be of a nature to over-stimulate the nervous system at one moment, that it may fall into a state of depression the next, as is the case with alcoholic drinks used with indiscretion. The tendency to determination of blood to the head may be mitigated, if not removed, by moderate diet, moderate exercise, moderate thought, moderate activity, due proportion of sleep, and, above all, by cheerfulness of disposition.

Philostratos.—Whenever there is proposed to be appointed, at the cost of the state, a public lecturer whose duty it shall be to deliver, at suitable intervals, a series of gratuitous lectures on the division of surgery named by our correspondent, the suggestion shall receive the support of this Journal. But lecturers and lectures, under the present system, are the curses of medical education; and we should sin deeply against the interests of medical students by advocating the establishment of any "new chairs" and "compulsory courses" in our medical schools. The class of pupils to whom *Philostratos* alludes will always find in the dissection-room and the dead-house, and the *library*, more available and applicable information than twenty Professor Ballingalls could give him in as many "recognised courses" of military surgery. Sir G. B. himself would probably answer this question in the affirmative.

S. G.—We could only be tempted to continue the discussion by something new. The first point in *S. G.*'s letter was answered at once by another correspondent. As regards the second, it is probable that, however erroneous in his views, the writer whom *S. G.* would answer meant to contend that only efficiently *educated* persons, of the class specified, should undertake the duty. Did *S. G.* never hear of Madame Boivin?

H. B., who early took up the controversy on men in the lying-in room, offers to us some "last words" in the shape of a review of the correspondence which has followed his letter. But the letters were themselves all so short, all so plainly written, and all so fully open to the judgment of every reader, that it is unnecessary to offer any fresh criticism, however pointed and ingenious, on their contents. The remarks of our correspondent are chiefly directed to the defence of female accoucheurs. But in discussing this question one thing is generally altogether overlooked, namely, that the attack is carried on chiefly against uneducated women, and the defence offered on their behalf. Women have not yet taken the trouble to study accouchements medically. How, then, can apologies, with reason, be presented on their behalf?

We thank *Studens Middlesexensis* for his kind wishes; no aspersions, with sentiments such as those expressed by our correspondent, can in any way affect the character of the gentleman in whose favour he writes.

Unguentum Acet. Morph.—The ointment recommended by *Dr. Mantell* is composed of

Acetate of morphia, gr. v;
Spermaceti ointment, ʒss. M.

The ingredients should be very intimately combined.

Subscriber.—The subject upon which our correspondent writes has already occupied more of our space than the inquiry deserves; with regard to it we may truly say, "quot homines, tot sententiæ."

Mr. Goddard.—Magendie injected warm water into the veins of a patient labouring under cholera, and the patient recovered. The effects were most remarkable, immediately arousing from their state of collapse, those upon whom the operation was performed. Transfusion is now a standard and most important medical operation; and in the course of experiments, medicines, the blood of other animals, &c. have been injected. In the veterinary school of St. Petersburgh, purgatives are sometimes administered to horses in this way. To ensure the life of the animal, the blood of the same genus, if not of the same species, must be used, for the very obvious reason that the particles of the blood of animals are adapted to the size of their vessels, and the particles differ in size in different genera of animals. Our correspondent should consult any modern work on physiology for information on this subject. Nitrous oxide gas, acts, we believe, by imparting a larger share of oxygen to the blood than is contained in atmospheric air.

The confession of alleged wrong or error on the part of *Mr. Charles Jones*, M.R.C.S., should be made in his own private chamber, to himself, in the usual way; not in public print, or before the Lord Mayor. The wrong, however, was not done by Mr. Jones, but by the parties who received and acted upon such evidence; the former labouring, probably, under ignorance, the latter in defiance of good judgment. But such proceedings were not common enough eight-and-thirty or forty years ago. The law is now altered in its more harsh particulars, though yet marked by absurdity; and the confession of contrition is not likely, even on that account, to have any useful effect.

The letters of *Mr. Simpson*, *Dr. Fosbroke*, and *Mr. Hytch*, came too late for insertion this week.

An Old Subscriber.—Not unless the master directed the attendance of the surgeon, or consented to discharge his demand. The surgeon should previously on such occasions fully understand whether the patient, the master, the parents, or the parish officers, will be his debtor or debtors.

Showing the No. of Deaths from all Causes, Registered in the 5 Weeks, ending Saturday, Feb. 12, 1842.

Causes of Death.	Jan. 9 to 15	Jan. 16 to 22	February 23 to 29	February 30 to F. 5	February 6 to 12	Weekly Av. 1838-41 (corrected)
Small-Pox	3	12	12	8	7	32
Measles	39	33	25	12	19	23
Scarlatina	9	7	11	8	14	32
Hooping-Cough	57	77	59	68	71	31
Croup	11	10	10	5	6	7
Thrush	2	2	1	2	5	5
Diarrhœa	13	5	9	7	5	8
Dysentery	....	2	3	3	1	2
Cholera	....	....	....	....	....	1
Influenza	....	1	2	2	6	2
Typhus	23	22	16	14	20	40
Erysipelas	5	6	9	3	6	6
Syphilis	....	2	2	....	1	.5
Hydrophobia	....	....	....	....	....	.1
TOTAL	162	179	159	132	161	190
Cephalitis	6	11	19	12	10	11
Hydrocephalus	30	27	36	35	38	34
Apoplexy	31	24	17	18	24	17
Paralysis	17	23	17	12	21	15
Convulsions	55	52	64	48	52	59
Epilepsy	10	2	6	5	4	4
Insanity	2	....	....	2	1	1
Delirium Tremens	....	1	3	3	4	1
Dis. of Brain, &c.	14	12	14	17	7	7
TOTAL	165	152	176	152	161	149
Quinsey	1	1	2	3	....	1
Bronchitis	29	24	24	41	36	10
Pleurisy	3	3	2	4	1	2
Pneumonia	115	134	115	123	94	72
Hydrothorax	5	8	8	7	13	5
Asthma	48	64	65	76	61	25
Consumption	141	114	159	129	142	141
Dis. of Lungs, &c.	14	26	32	26	18	12
TOTAL	356	374	407	409	365	268
Pericarditis	1	....	....	1	1	.6
Aneurism	1	....	....	1	....	.6
Dis. of Heart, &c.	24	24	18	17	20	17
TOTAL	26	24	18	19	21	18
Teething	14	21	18	13	18	17
Gastri.—Enteritis	15	16	16	17	16	16
Peritonitis	....	....	2	1	1	1
Tabes Mesenterica	5	10	4	3	5	4
Ascites	....	....	1	1	....	.5
Ulceration	1	2	2	1	....	1
Hernia	3	1	2	2	1	2
Colic or Ileus	....	3	1	2	2	2
Dis. of Stomach	5	8	8	3	8	5
Hepatitis	1	....	1	2	4	1
Jaundice	2	....	2	....	1	2
Dis. of Liver, &c.	7	9	8	7	9	8
TOTAL	53	70	65	52	65	61
Nephritis	1	....	2	....	1	.4
Diabetes	....	....	1	....	....	.3
Stone	....	....	....	....	....	.4
Stricture	....	1	....	....	1	.3
Dis. Kidneys, &c.	6	7	4	4	7	2
TOTAL	7	8	7	4	9	4

Causes of Death.	Jan. 9 to 15	Jan. 16 to 22	February 23 to 29	February 30 to F. 5	February 6 to 12	Weekly Av. 1838-41 (corrected)
Childbed	5	8	7	11	6	7
Ovarian Dropsy	....	2	2	....	....	.3
Dis. of Uterus, &c.	2	3	1	1	1	2
TOTAL	7	13	10	12	7	10
Rheumatism	2	2	....	2	1	3
Dis. of Joints, &c.	5	3	....	6	5	3
TOTAL	7	5	....	8	6	6
Ulcer	....	....	1	3	2	.4
Fistula	....	....	....	1	....	.3
Dis. of Skin, &c.	1	1	....	....	2	.3
TOTAL	1	1	1	4	4	1
Inflammation	4	13	5	4	8	10
Hæmorrhage	3	1	6	4	1	3
Dropsy	30	35	44	32	45	34
Abscess	1	6	2	2	1	4
Mortification	4	3	8	1	1	4
Scrofula	1	3	3	3	1	2
Carcinoma	11	8	8	11	11	7
Tumour	3	.. .	1	1	4	2
Gout	2	4	2	1	....	1
Atrophy	11	10	13	11	4	5
Debility	28	28	22	27	21	17
Malformations	2	....	3	....	1	1
Sudden Deaths	24	21	25	10	15	14
TOTAL	124	132	142	107	113	104
Old Age	107	109	109	104	106	69
Intemperance	....	1	1	....	....	.6
Privation	1	....	2	2	....	.5
Violent Deaths	25	37	14	14	23	24
TOTAL	26	38	17	16	23	25
Causes not Spec.	1	5	3	6	1	7
Deaths, all Causes	1042	1110	1116	1025	1042	912
No. of Week	2	3	4	5	6	....

1841—42.	Ages. 0 to 15	15 to 60	60 & upwards
Jan. 9th to 15th	439	321	281
16th to 22nd	480	339	291
23rd to 29th	458	387	270
30th to Feb. 5th	408	336	281
Feb. 6th to 12th	440	363	235
Weekly Average, 1838—41	433	312	165

TEMPERATURE	High.	Low.	D. Mean
Week ending Jan. 15	38°	29°	33°
" 22	43	29	35
" 29	45	27	37
" Feb. 5	49	33	41
" 12	52	32	41

	Enumerated Pop. 1841.	Jan. 9 to 15.	Jan. 16 to 22.	Jan. 23 to 29.	Jan. 30 to Feb. 5.	Feb. 6 to 11.	Weekly Av 1838-41
West Districts	300,705	154	169	178	148	177	135
North Districts	365,660	187	226	198	197	187	162
Central Districts	373,806	221	204	257	212	208	188
East Districts	392,496	214	236	240	205	219	205
South Districts	438,060	266	275	243	263	251	221
	1,870,727	1042	1110	1116	1025	1042	912